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Int GCSE Geography 4GE1 01

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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 marks on the paper 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 related 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 AOs 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 4 parts also apply to all of question 5 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 Q04(e).

Question 1 (b)(ii)

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

Question 1 (b)(iii)

A significant proportion of candidates were able to achieve 2 marks on this question, however, on occasion some responses merely described the process of saltation rather than explain why the process occurs. Where confusion occurred it was most often writing a response explaining traction, although, there were rare examples where candidates gave answers describing/explaining suspension and solution.

(iii) Explain the process of saltation.

(2)

This is when small pebbles ~~hot~~ hop along the base of a river, carried by the current. ~~and~~

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2 marks:

Pebbles hop along (1) carried by the current (1).

Carried by the current is sufficient enough to be credited for explaining why saltation occurs in a river.

(iii) Explain the process of saltation.

(2)

Sulkuhzn is when small particles ~~and~~ like small ~~flow through the river~~ bounce along the river bed

rocks

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1 mark:

Rocks bounce along (1) with no explanation for why this occurs.

(iii) Explain the process of saltation.

(2)

saltation is when ~~the rate increases from~~ substances in the ~~riverbeds~~ riverbeds are eroded away by the river and dissolved into the water

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0 marks:

This is a response which confuses the transport process saltation for an erosional process and also describes solution.

(iii) Explain the process of saltation.

(2)

Saltation is a process of transporting materials. All light weight materials are carried as the river flows.

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0 marks:

Candidate is describing suspension.

Question 1 (c)

This question requires candidates to use a resource (Figure 1a) showing an extract of an OS map of an upland area. The first mark is awarded for identification of a relevant piece of evidence with the second mark awarded for the reason why this makes it an upland area.

A large proportion of candidates were able to achieve 4 marks; the most common responses were focused on contours linking to height and gradient, cliffs and boulders/loose rocks. Fewer candidates made reference to waterfalls, river sources, river width shown on the map.

Some candidates did not select relevant evidence, for example, some made reference to the recreational route but as this is not a feature specific to upland areas it was not credited. The question requires candidates to select evidence from the map, therefore, they need to identify a feature shown rather than a feature not shown which means that references to 'not many buildings', 'not many roads' was not awarded.

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

Suggest **two** pieces of evidence from the map that this is an upland area.

(4)

1 ~~Most~~ Marshes, heath and rough grasslands dominate the Land usage showing that there is alot of rainfall in the area, typical for upland areas.

2 Topography of the area (671,27) is very steep as the contors on the map are very close together

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4 marks:

Marshes, heath and rough grasslands dominate (1) showing there is a lot of rainfall, typical of upland areas (1).

The topography of the area (71 27) is very steep (1) as the contours are very close together (1).

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

Suggest **two** pieces of evidence from the map that this is an upland area.

(4)

1 the contour lines go really close together which means the steepness + gradient goes up.

2 and on the map you can see the diagrams for loose rock + vertical cliff face around the hill.

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3 marks:

Contour lines are close together (1) which means the land is steep and gradient goes up (1).

There are loose rocks and vertical cliff face around the hill (1).

There is no explanation for why this makes it an upland area (required for the second mark).

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

Suggest **two** pieces of evidence from the map that this is an upland area.

(4)

1 Very open area and quite desolate with not many signs of building or general human life as theres lots of marsh and grassland.

2 The contour lines show there is steeper areas and lots of outcrop, showing that this area is quite high up.

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3 marks:

There is no credit awarded for the lack of buildings but AO3 credit is awarded for 'there is lots of marsh and grasslands' (1).

The contour lines show there is steeper areas (1) and lots of outcrop showing the area is quite high up (1).

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

Suggest **two** pieces of evidence from the map that this is an upland area.

(4)

1 There is some steepness in the areas that have loose rock.

2 Figure 1a suggests that there's a vertical cliffs and cliffs are only in uplands.

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2 marks:

Some steepness in the areas that have loose rock (1). No development provided.

There is a verticle cliff (1) – no credit for development as cliffs do not only occur in upland areas.

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

Suggest **two** pieces of evidence from the map that this is an upland area.

(4)

1 The show map shows that most of land is located over 100 meters above Ometers.

2 Thes a Recreational route suggesting that this map is showing ~~more of the~~ upland area.

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1 mark:

Most of the land is located over 100 m (1).

The second point is not credited as recreational routes are not a distinct feature of upland areas.

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

Suggest **two** pieces of evidence from the map that this is an upland area.

(4)

1 Vertical erosion is dominant in the upland as is in the map

2 The river bed is very rough as is in the up lands. showing that this is an upland

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0 marks:

Netiher point can be evidenced from the map.

Question 1 (d)

The vast majority of candidates achieved the mark for this question. A few candidates confused the feature with peak rainfall.

Question 1 (e)

This question requires candidates to identify a cause of river water pollution and develop this to explain why it occurs.

Candidate responses were generally strong for this question; they are clearly aware of the different types of river water pollution and most could develop this to explain why it happens. Where candidates did not achieve full marks was usually because they had written about the same source of pollution twice or they have misinterpreted the question and identified a cause but developed this to give an impact of the river water pollution on the environment. This is not the focus of the question and therefore, they were not awarded the development mark(s).

(e) Explain **two** different causes of river water pollution.

(4)

1 One cause is agriculture. Agricultural runoff is water contaminated with pesticides and fertilisers, and this can reach a river and lead both to eutrophication as well as a reduction in the cleanliness and safe drinkability of the water.

2 Another is by industry. Industrial processes may use chemicals, and the waste/chemicals can be brought into contact with river water by sewage pipes, and chemicals can detrimentally impact the drinkability and pollution of the river.

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4 marks:

Agriculture (1) runoff from pesticides/fertilisers reach the river (1).

There is no credit for eutropication as an impact from the pollution.

Industry (1) as they use chemicals which can reach the river through pipes (1).

(e) Explain **two** different causes of river water pollution.

(4)

1 Human type of pollution can come from the factories as the waste can be thrown into the river

2 Farming can cause with overland flow transfer pesticas into the water damaging qualities and destroying biodeversity

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3 marks:

Pollution from factories (1). No credit for development as 'waste thrown into the river' is too vague, the type of waste needs to be stated.

Farming (1) will transfer pesticides by overland flow (1).

(e) Explain **two** different causes of river water pollution.

(4)

1 waste disposal, throwing plastics, oil, food waste and chemicals.
This can harm the wildlife living in the river by disrupting its PH and waste can cause more deposition

2 Acid rain. can cause the mixture of acids harmful chemicals into the river. causing this to prevent us from being able to drink, and wildlife to die.

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2 marks:

Throwing plastic/oil/chemicals (1). No credit for the development as this is an impact of this pollution.

Acid rain (1). No development for impact of on the environment. To gain the second mark, candidate needs to explain the cause for the acid rain.

(e) Explain **two** different causes of river water pollution.

(4)

1 Tourism causes a lot of river water pollution as people ~~[illegible]~~ ~~[illegible]~~ usually don't care about the water and usually through garbage in it.

2 ~~[illegible]~~ Wastes are usually dropped in rivers, this causes deseases and a lot of water pdlution.

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1 mark:

Tourists throw garbage in rivers (1). Litter/garbage can be credited as a type of pollution.

No credit for the second point as waste is too vague for credit and the development is an impact of pollution.

Question 1 (f)

For this question candidates are required to explain one way dams can affect river regimes. It is often these 3 mark questions that candidates find most demanding; developing one point in sufficient depth to be awarded full marks. Historically, candidates often find questions on river regimes challenging.

Most candidates were able to identify a correct impact dams have on rivers and the majority of these could explain a basic reason why this change occurs. Less candidates were awarded the third mark as they either made a link to an impact on water quality, impact on the ecosystem (the most common was preventing fish from migrating upstream) rather than an impact on the river regime.

(f) Explain **one** way dams can affect river regimes.

(3)

Dams store water and prevent water from flowing into the rive, when rainfall occurs the precipitation that falls into the ~~water~~ dam is blocked, causing the river discharge of the river region to decrease.

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Examiner Comments

3 marks:

Dams store and prevent water from flowing (1) after precipitation (1) causing the river discharge to decrease (1).

(f) Explain **one** way dams can affect river regimes.

(3)

Dams can slow down the flow of a river which causes a large build up of water which can lead to large amounts of erosion which can damage the dam or it's surrounding areas.

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2 marks:

Dams slow down the flow of a river (1) which causes a large build up of water (1).

The rest of the answer is not relevant to river regimes.

(f) Explain **one** way dams can affect river regimes.

(3)

Dams can affect river regime by controling the volume of water output to the river, this can ~~call~~ decrease erosion as there are less water, and the water having less kentic energy to ~~eros erod~~ carry settlements ~~drop~~ down stream.

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Examiner Comments

1 mark:

Dams can control the volume of water output to the river (1).

The rest of the response is not relevant to river regimes.

Question 1 (g)

In 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 candidate 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 shortage 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 shortage in developed, developing/emerging countries, as well as the link to latitude and its impact on likelihood of water shortages. Some candidates were able to link the data on precipitation and sunshine hours to rates of evaporation and therefore the impact on experiencing water shortages.

To access the higher marks candidates need to go beyond simply describing what is shown in the resources and provide several clear developed reasons for water shortages 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 their responses.

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

Analyse the possible reasons for water shortages.

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

(8)

we can clearly see from figure 1c that many countries suffer from water shortages across the globe, however areas with high water shortage are those along the equator. For example we can see that most of Africa suffers from water shortages. Perhaps this is because they are a developing country and don't have enough money to control their water supply. Moreover, they have a lot of land which is in the desert, without proper technology and adequate funding they will not be able to access all the water needed. Similarly, in India, they suffer from high water shortage due to their supply being lower than their demand. This is because they have a high population density, seen in the figure to be 464 people per km^2. This contributes to their water deficit. Whilst their annual precipitation is arguably quite high, India is a developing country & perhaps has not yet developed the technology necessary to collect this rainwater. Due to the high population, the demand for water is very high: water is needed for drinking, cooking and cleaning. Furthermore in this not countries they need to use a lot of water for

irrigation as the hot climate leads to their crops drying out. In the figure we can also see that the Southwestern USA there is a high water shortage. Whilst they are a developed country, they have a high water supply as water is needed for industry, farming and whilst they may not have the highest population density, all the people are rich and have (Total for Question 1 = 25 marks)

enough money to use water freely. Lastly we can also see that the hours of sunshine affect water shortages in a country: Egypt has 4400 average hours of sunshine a year; this promotes evapotranspiration from plants and increases uptake of water from ground into plants. This will overtime reduce the water supply in the earth leading to high water shortage. To conclude, we can see there are many reasons for water shortage including the geographical location of the country as well as their developing status.

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8 marks:

This candidate has worked through each location shown in the resource and explained why the region is likely to experience water shortages. They explain which of the factors is likely to be impacting each country focusing on population density, average precipitation and sunshine hours. They demonstrate the importance of precipitation and sunshine hours by linking this to rates of evapotranspiration. They also make links to levels of development and how this may influence the demand for water. There is a concluding statement at the end to reach the top of level 3.

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

Analyse the possible reasons for water shortages.

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

(8)

Water shortages occur when the supply of water doesn't meet the demand, and they can be affected by changes in demand and supply, caused by many reasons.

The figure shows that the areas with a high water shortage are mainly located around the equator, or in areas with very hot climates. The figure states that Egypt receives 4,400 hours of sunshine per year and the rainfall is only 22 mm every year. This therefore shows that the hot climate increases river outputs such as evaporation and transpiration, as there is more heat from the sun, but reduces inputs such as precipitation. This therefore means that there is a very low supply of water to these countries and therefore there is a negative water balance. Furthermore, there are also large deserts, such as the Sahara desert, ~~in these areas~~ which affects the availability of water, as these are areas of extremely low supply. //

Figure 1c also shows that population density can affect ~~the~~ water supply and demand. For example, figure 1c shows that ~~Australia~~ India has a population density of 464 people/km^2. This means that there will be a very high demand for water, particularly in main

cities, but this may not be possible to meet due to the level of development in India, many slums have developed due to forcey and therefore many people have little access to drinking water as a lot of it is contaminated by sewage from the large population density, so therefore the dense population not only increases the demand but also reduces the supply.

(Total for Question 1 = 25 marks)

* The figure highlights that many of the areas of high water shortage are considered to be either LICs or NICs as they are unable to effectively treat water so that it can be drunk. For example,

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7 marks:

This response identifies the general pattern shown on the map and then goes on to explain the factor which they feel is the main reason for the water shortage for each country (although the judgement is inferred and not made explicit). They explain the role of evapotranspiration, population density and level of development. There is no concluding statement but the use of 'furthermore' demonstrates some analysis of the issue to reach level 3.

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

Analyse the possible reasons for water shortages.

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

(8)

Water shortage around the word are due to different reasons. Figure 1c shows that ~~Southwestern Asia~~ Egypt is an ~~area~~ area of high water shortage. This could be due to the fact that Egypt has such a high amount of average hours of sunshine per year, meaning water sources are evaporated, leading to water shortages. However, the river Nile is located in Egypt, so, possibly, transportation and cleaning of water might be lacking in Egypt hence the high water shortage.

Another reason for water shortages in ~~Egypt is the~~ the word is due to a high population density. Figure 1c shows that India is an area of high water shortage. This is because of the 464 people/km^2 in India that causes this, as fig 1c shows. This ~~area~~ is because water sources are heavily strained by the amount of people in the country, meaning there will be a water shortage, as too many people are consuming water or using it for agriculture/industry.

Figure 1c also shows ~~Both~~ South western USA to lack in water. This could be due to the fact that there are no water sources in California, as it is mostly dry-arid desert. This means that a reason for water shortage is there being no water sources to begin with.

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5 marks:

This response works through the three locations highlighted in the resource and gives a reason for the water shortage with some development to further explain the cause, although this is quite simplistic.

The response is fairly descriptive rather than analytical but is sufficient to reach mid-level 2.

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

Analyse the possible reasons for water shortages.

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

(8)

In figure 3c, we can see that in Southwestern USA there is water shortage this is because they are right on the equator line. They recieve a lot of sunshine in that part which dry out all the crops. ~~If the crops~~ When the crops need water, the farmers use up more water this causes there to be a shortage for people so they have a high population density.

In India, they have a very big population meaning the demand for water is significantly higher. Even though they receive a decent amount of rainfall it gets used up very quickly because of the population density of 464/km^2. ~~They cannot find the~~ India is a very polluted place so they do not have clean water.

In Egypt, they receive nearly no rainfall every year and they receive

a lot of sunshine making the demand for water much higher than other places. Egypt are a much poorer country so it's harder for them to sustain water making the demand go up. and they have a big population

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4 marks:

This response uses the resource to identify the locations and state data for each location with a simple development for each. The depth of their reasoning is not sufficient to move this response above the bottom of level 2.

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

Analyse the possible reasons for water shortages.

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

(8)

Reasons for water shortages could mainly link to overpopulation aswell as the amount of sunshine/heat they experience within their region.

A country like Egypt is quite big with the average hours sunshine being 4400 hours per year. Reasons to that could be the deserts the country is full with.

Places like India is already known for their hot weather and major overpopulation as many people migrate towards the main cities in search of jobs which may lead to a lot of people cramming up in one country or city.

The southwestern USA has a reasonable population, though again, a lot more sunshine than yearly precipitation which may be one of the key factors to their watershortage.

There is a noticeable trend in all three places as their is a lot more annual sunshine then annual precipitation making the regions quite dry and hot.

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3 marks:

This response makes reference to the Figure for each location highlighted and states a very basic statement to suggest why each place experiences water shortages. There is repetition in the reasons provided for Egypt and SW USA which reduces the level of AO3 credit.

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

Analyse the possible reasons for water shortages.

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

(8)

* Possible reasons for water shortages could be: Population density. Shown from the Source, countries with denser populations are more in need of water due to more people living there. For example, India with a population density of 464 people/km². A second possible reason could be the hours of sunshine per year. For example, Egypt with a high 4,400 hours of sunshine a year.

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2 marks:

Basic AO3 credit for 'denser populations are in need of more water.'

Basic AO4 credit for data lifted from resource.

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

Analyse the possible reasons for water shortages.

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

(8)

I think eygpt has high levls of water shortages is because of the ratio of sun to rain, I don't think people ~~have~~ are the problem in eygypts situation its just the water levles. They could look at having more water floun in for when they need it or they could start / continue on a bigger scale treating sea water for human consumption.

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1 mark:

"Egypt has high levels of water shortage because of the ratio to sun and rain".

The rest of the response is not focused on the question.

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 weak swash or strong backwash. A small number of candidates simply wrote swash, backwash which was too vague for credit.

Question 2 (b)(iii)

In this question candidates are required to explain one type of coastal mass movement. Candidates are awarded for identifying a type of coastal mass movement and explaining why this happens.

There has been an improvement in candidates understanding of mass movement; historically it has been the coastal process candidates find most challenging to identify and explain. More candidates were able to identify a correct type of mass movement, although some did explain a different type of coastal process, most often a type of weathering. What candidates found challenging was to explain why the mass movement occurs; many responses stated a type of mass movement and then just described how the material moves down the slop rather than explaining why the sediment is moving downwards eg due to gravity.

(iii) Explain **one** type of coastal mass movement.

(2)

Sliding is a form of coastal mass movement, where cliff-face material slides directly down a steep slip lane due to the force of gravity.

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2 marks:

Sliding (1) where material slides down a slip (plane) due to the force of gravity (1).

(iii) Explain **one** type of coastal mass movement.

(2)

Slumping occurs when weathered Material moves down a slope at great speed, often due to it having an increased weight as rainfall has saturated it.

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2 marks:

Slumping (1) moves down due to having an increased weight as rainfall has saturated it (1).

(iii) Explain **one** type of coastal mass movement.

(2)

One type of coastal movement is cliff fally due to unstable cliffs so the top part of it falls into the water

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1 mark:

Cliff falls (1) is sufficient to credit as rock falls. There is no reason provided for why the cliff is unstable so a second mark is not awarded.

(iii) Explain **one** type of coastal mass movement.

(2)

Sliding - this is where the material due to erosion slide down the cliff face as one whole then when it hits the bottom it breaks down

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1 mark:

Sliding (1) – the rest of the response just describes what sliding is rather than explaining why it happens so is not credited.

(iii) Explain **one** type of coastal mass movement.

(2)

Longshore drift is the movement of material from one area of a beach to another. This takes material and deposits on to the second beach area.

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0 marks

Incorrect coastal process.

Question 2 (c)

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

A large proportion of candidates were able to achieve 4 marks; they coped with the demands of the OS map effectively. The most common responses were focused on how many buildings were close to the coastline and the beach being used as a tourist attraction. The development mark was awarded for explaining why this is important for the area eg. to boost economy.

There were examples of candidates who did not clearly use the resource, for example, by stating they last a long time with nothing used from the map. This meant these responses could only be awarded the AO2 credit not AO3.

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

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

(4)

1 hard enginering also reduces the wave energy and prevents Coastal erosion, so groynes can be used to prevent too much movement of sediment down the beach and save houses and soft at Kirkley, so doesn't have to be replaced as frequntly as beach replenishm.

2 Also hard engineering strategies such as curved sea walls can protect the South Pier of Lowestoft from both erosion and flooding, so means that businesses are not damaged due to high tides and then less to main people lose their jobs, so this is more effective than hedging and less expensive, as

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4 marks:

Hard engineering prevents erosion (1) which saves the houses at Kirkley (1).

A curved sea wall would protect the South Pier in Lowestoft (1) meaning businesses aren't damaged (1).

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

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

(4)

1 Land at the coast is populated with buildings so soft engineering strategies which require some less valuable land to be sacrificed are not suitable so hard engineering is suitable.

2 Hard engineering strategies such as building groynes build up the beach which is a very popular attraction for both locals and tourists.

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3 marks:

Land is populated with buildings (1) so soft engineering which requires sacrificing land is not suitable here (1).

Building up a beach for tourists (1). There is no specific reference to the Figure for the AO3 mark.

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

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

(4)

1 it is a highly populated town so needs protection

2 Here is a harbour which needs all-time access and protection

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2 marks:

It is a highly populated town (1).

There is a harbour which needs access (1).

Neither point is sufficiently developed to gain the AO2 marks.

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

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

(4)

1 Because many people live in the area- it is an important place.

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1 mark:

Because many people live in the area (1).

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

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

(4)

1 to Create and build more recreational routes to be able have Shortcuts and to leave any traffic

2 parking/park and ride all year /seasonal

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0 marks:

The first point, although stating something that is shown in the key, is not relevant to coastal protection.

The second point is directly lifted from the map key and too vague for credit.

Question 2 (d)

For this question candidates are required to explain one conflict that might occur between different users of a coastline. It is often these 3 mark questions that candidates find most demanding as it can be challenging developing one point in sufficient depth to achieve full marks. Historically, candidates tend to find it challenging discussing specific stakeholder/players, which would be helpful to do for questions focused on conflict.

Most candidates were able to gain at least 2 marks by inferring a conflict between developers and conservationists without making the groups explicit. The better responses provided a specific group and explained their view and an opposing group and their view.

(d) Explain why **one** conflict might occur between different users of coastlines.

(3)

There may be conflict when ~~people~~ developers & environmentalists differ in opinion of whether tourist resorts like hotels should be developed. Developers want money & profit whilst environmentalists want a preserved area of coastline with as little human sites as possible.

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3 marks:

Conflict when developers and environmentalists differ in opinion of whether tourist resorts should be developed (1). Developers want money and profit (1) whilst environmentalists want a preserved area with little human sites (1).

(d) Explain why **one** conflict might occur between different users of coastlines.

(3)

environmental groups would have conflict with residents on the coastline, as hard engineering can be harmful to ecosystems, which many ~~environmentalists~~ environmental groups would dislike. However residents would want hard engineering, because it is more successful at stopping erosion.

ResultsPlus
Examiner Comments

3 marks:

Environmental groups would have conflict with residents (1) as hard engineering can be harmful to ecosystems (1). However, residents would want hard engineering because it is more successful at stopping erosion (1).

(d) Explain why **one** conflict might occur between different users of coastlines.

(3)

The wildlife may want a clean, unpolluted area but factories and manufacturers may need land in order to build these. so wildlife would be distrupted due to pollution of factories

ResultsPlus
Examiner Comments

2 marks:

Wildlife may want a clean, unpolluted area (1) but factories and manufacturers may need land to build so wildlife would be disrupted (1).

Although, wildlife is not a stakeholder this response is sufficient enough to infer the idea of conflict between manufacturers and conservationists.

(d) Explain why **one** conflict might occur between different users of coastlines.

(3)

Some people may want the ~~the~~ coastline to stay the same so therefore they might want no changes, however it may have to be changed for safety reasons.

ResultsPlus
Examiner Comments

1 mark:

Some people may want the coastline to stay the same, but it may have to change for safety reasons (1).

There is an inferred conflict in this response but no opposing view offered so just 1 mark awarded.

Question 2 (e)

The majority of candidates correctly identified the coastal landform shown.

Question 2 (f)

This question requires candidates to explain two physical factors that affect coastal deposition. Candidates found the demands of this question a challenge as some are less clear on the reasons why deposition occurs along coastlines.

Most candidates attempted to explain longshore drift as a reason for deposition and as this is a coastal transport process this was most often not relevant. Candidates attempted to explain how a change in direction of the coastline caused deposition without stating an accurate factor for why this might be the case. They often ended up explaining spit formation, which was not the focus of the question. Some candidate responses were focused on human causes for deposition; these candidates would often explain the role of coastal management impacting deposition, particularly the influence of groynes on a beach, despite the focus of the question being on physical factors.

(f) Explain **two** physical factors that affect coastal deposition.

(4)

1 Headlands can break wave, so they lose energy and deposit all their material and do not erode the bay.

2 Spits can lead to deposition behingd them which leads to the creation of salt marshes. The blockage slows the watw which loses energy and cannot carry sediment anymore.

ResultsPlus
Examiner Comments

4 marks:

Headlands can break waves (1) so they lose energy and deposit in bays (1).

Spits can lead to deposition behind them as the blockage slows the water (1) which loses energy and cannot carry sediment (1).

(f) Explain **two** physical factors that affect coastal deposition.

(4)

1 The depth of the water impacts deposition because shallow water decreases the energy a wave has, causing it to deposit the sediment it's carrying.

2 A change in coastline direction can impact deposition ~~because~~ because if, for example, there was an estuary, the movement of water from the estuary out to sea will cause the waves heading in towards the estuary to lose energy and deposit sediment.

ResultsPlus
Examiner Comments

4 marks:

The depth of the water (1) as shallow water decreases energy of the wave (1).

A change in direction of the coastline where there is an estuary means the water from the estuary out to sea (1) will cause the waves heading in towards the estuary to lose energy (1).

(f) Explain **two** physical factors that affect coastal deposition.

(4)

1 the energy of the waves; if the swash is stronger than the backswash ~~a~~ then material will be deposited.

2 The ~~type~~ weight of load/sediment being carried by the river. If the load/sediment is heavy it will be deposited.

ResultsPlus
Examiner Comments

3 marks:

The energy of the waves (1) if the swash is stronger than the backwash then material will be deposited (1).

If the load is heavy it will be deposited (1). There is no reason why the load being heavy causes deposition for the second mark.

(f) Explain **two** physical factors that affect coastal deposition.

(4)

1 Wind Speed, slower wind speeds will cause less wave energy therefore less material will be ~~deposited~~ carried ~~by the waves~~ and deposited by the waves

2 prevailing wind direction, the waves will carry material across the beach in the direction that the prevailing wind takes it, therefore depositing it along that direction

ResultsPlus
Examiner Comments

2 marks:

Wind speed (1) slower wind speeds will cause less energy waves therefore less material will be carried (1).

Zero marks for the second point as this describes longshore drift as opposed to a factor that causes deposition.

(f) Explain **two** physical factors that affect coastal deposition.

(4)

1 If there is a river it will mean that the sediment can not be deposited in it's path and will affect costal deposition

2 the direction of the prevailing wind will subsquently affect longshore drift direction making it a factor which affects deposition. as long shore drift is a depositional proeess.

ResultsPlus
Examiner Comments

1 mark:

If there is a river it will mean that sediment cannot be deposited in its path (1). There is no explanation for why this prevents deposition and so no development mark awarded.

Zero marks for the second point as they describe the transportation process of longshore drift rather than explaining why deposition occurs.

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 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 large 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 frequency of storm surges currently recorded in the 21st century.

Some candidates used the information from the resource and made links to the reasons why some of these countries are more or less at risk based on their level of development and their ability to plan, predict and respond to flooding. Some also made the link to latitude and its importance in relation to being exposed to tropical cyclones. Few 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 analyse required to reach level 3.

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

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

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

(8)

Figure 2c shows that USA is a country with a ~~lot of~~ large population living in areas at risk of coastal flooding. USA is an AC, with a lot of major cities being located on coasts such as New York or Los Angeles. These cities are located ~~we~~ on the coastline, ~~and~~ however, they are advanced ~~and~~ ~~rely on~~ and still urban. This is because these locations provide a comfortable climate to live in, leading to 34 million people living on coasts. Furthermore, people on coastlines rely on fishing ~~as~~ a form of income or food supply: this leads to a lot of people living on coasts, leading to a higher risk of coastal flooding. However, the USA is less at risk than China or the Philippines: this is because as USA an AC, it has advanced technology ~~that~~ and advanced infrastructure that leads to a reduced risk of flooding on the human population.* USA has an East and West Coast on the ocean: leads to flooding as oceanic waves are more energy: flooding. China is also a country ~~at risk~~ who's population is at risk from coastal flooding. Figure 2C shows that 204 million people live in low-lying coastal areas. This is because rice farming is a significant and essential aspect of farming in China: rice farming requires moist land located at a coast: due to this, people who rely on rice farming as their source of income are at risk from coastal flooding. ~~In addition~~ However, China is located over the equator: this leads to a high amount of mangroves, which help prevent coastal flooding by stopping high frequency and high energy waves because it is located in an intertidal zone, and its complex root systems prevents storm surges ∴ flooding.

Also, China ~~is not located on~~ does not have a coastline on the ocean, meaning oceanic, high-energy waves do not reach the coasts. Philippines population is strongly at risk from coast flooding, as it is made up of islands in the Pacific Ocean. This leads to a higher chance of oceanic storm surges, increasing the risk of flooding. Furthermore, it is an LIDC, meaning it is less advanced infrastructure :. less advanced ability to prevent floodings. Furthermore, it cannot rely on hard engineering methods, like sea walls, to deflect the power of waves

(Total for Question 2 = 25 marks)

* USA has ability to use hard engineering ~~to prevent~~ such as sea walls: deflect wave energy back into the ocean, leading to less flooding

ResultsPlus
Examiner Comments

8 marks:

Although this response does not have a concluding statement at the end there is evidence of analysis throughout the response, demonstrated by using 'however' and 'furthermore' throughout their response. They also make a judgement at the start of their paragraph about the Philippines "population is strongly at risk". This is sufficient analysis to reach the top of level 3.

This candidate also demonstrates a detailed understanding of the issue and strong knowledge of why people living in developed countries desire living on the coastline but are also better protected as they can afford hard engineering. Whilst countries like the Philippines are islands which are vulnerable to storm surges being located in the tropics. They demonstrate their understanding of why mangroves might reduce the risk for somewhere like China, showing very strong AO3. They use evidence from the resource throughout their response to also meet the level 3 AO4 descriptor.

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

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

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

(8)

Figure 2c shows the USA (a high income country) China (a newly emerging economy) and Philippines (a low income country) and why they are at risk of coastal flooding in figure 2c it shows how the US has a ~~percen~~ "61.4%" of people living in low-lying land whereas China has 18.1% and Philippine has 11.9%. Low lying land can significantly increase the risk of coastal flooding as the low land is more exposed. This therefore makes America more at risk of coastal flooding as "61.4%" is low lying and with people living there this increases the population density of the area, making the area more at risk of damages and coastal flooding // However Philippines has only 11.9% of low urban areas as it says in figure 2c but suffered from 184 storm surges as it says in figure 2c as it is an island surrounded by the sea making it more at risk of coastal flooding

Figure 2c shows how china has a population of 2041 million whereas USA 34 million so this means China has a higher population density in general leaving more people at risk of damage caused by coastal flooding. Additional China suffered from 392 storm surges as it says in figure 2c **(Total for Question 2 = 25 marks)**

which may be due to the fact that a large amount of the country is exposed to the coast making it more at risk of flooding. Phillipines compared to all of Finally all ~~countries in figure 2c mainly~~ ~~china~~ c the other countries is more closely and significantly located near the equator and tropics so warm sea water rises which can lead to storm surges or tropical cyclones which lead to coastal flooding. As phillipenes as it shows in figure 2c is more closely located to the equator it is at higher risk of coastal flooding compared to ~~America~~ USA which in figure 2c shows it to be further away from the equator than china and phillipenes so it is at less risk of coastal flooding

To conclude some countries are more at risk to coastal flooding due to significant percentage of lowlying land, exposure to the coast and the location of the country and if it is closer to the equator it is at higher risk of coastal flooding

ResultsPlus
Examiner Comments

7 marks:

This response relies more heavily on the evidence from the resource to justify which country is more at risk. There is more description of the resource for elements of this response and some repetition of the same idea. However, they make a judgement and justify why they believe the Philippines to be most at risk and there is some evidence of lower level 3 AO3 with the link to level of development influencing a country's level of risk.

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

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

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

(8)

As shown in fig. 2c, some countries are more vulnerable to coastal flooding than others. For example, figure 2c shows that the US have experienced 21 storm surges in the 21st century, compared to China's 392. This may be due to the countries' different latitudes from the equator; China is closer, and therefore more at risk from coastal flooding due to tropical cyclones, as they form more often in warmer areas (near the equator.) The 23.8 million people living in low-lying coastal areas in the Philippines (shown in fig. 2c) may also be more at risk of coastal flooding than the US or China due to their inferior economic power. The Philippines are an LIC, meaning they may not be able to afford advanced, effective coastal defences. Another reason china may be more affected than the US population is due

to there being 204 million people living in at-risk areas in China, compared to 34 million in the US. Therefore, more people are affected by coastal flooding in China.

Obviously, physical factors such as proximity to coastline affect the size of the effect of coastal flooding. Landlocked countries or countries with small access to the coast/ small coastline will be significantly less affected than areas such as the Philippines.

(Total for Question 2 = 25 marks)

ResultsPlus
Examiner Comments

6 marks:

This response demonstrates less depth than the level 3 responses. It uses evidence from the resource accurately to support points and this is balanced throughout the response. The AO3 is logical and coherent but arguments are not well developed which is required to reach level 3.

There is evidence of judgement at the end of the response to reach the top of level 2.

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

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

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

(8)

In source 2c, looking at the USA has the highest percentage of people living at low-lying urban areas at 61.7%, meaning there could be more economic and social risk. Yet the USA, from source 2c has had only had 21 storm surges, potentially because the USA is an HIC and has invested more money into defending the coastline.

In source 2c, China has the most people at 204 million, which could lead to the most risk, but only 18% are in urban areas, meaning most of the population is in rural areas, where the risk is lower. However, although it has the most recorded storm surges from 2c at 392, suggesting that their population is still at the greatest risk because of the lack of defence and the high flooding numbers.

From source 2c, the Philippines has also seen high numbers of storm surges - 15 - but the lowest % living near the coast, suggesting that the lack of economic stability has meant the population is at a greater risk.

ResultsPlus
Examiner Comments

4 marks:

This response works through the three countries highlighted stating whether the data is higher or lower than the other countries. The candidate offers some simple reasons for levels of risk although these are not all fully accurate, eg the reason for the USA only having 21 storm surges is not as a result of the level of defence. There are elements that lack clarity 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 more at risk from coastal flooding than others.

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

(8)

Figure 2c states that china has had 392 recorded storm surges in the 21st century. This means there is a high level of rainfall causing flooding to take place at coasts.

Figure 2c states that the USA has 61.4% of total urban population living in low-lying urban areas. These people ~~more at~~ less at risk than the phillipines as it has a less amount of storm surges

The ~~has most of it's~~ phillipines is an island making it already at risk of coastal flood but Figure 2c says 23.8 million people are in these coastal areas putting themselves at risk.

Another country in figure 2C with a large population living in low-lying coastal areas is India who have a very high population meaning lots of people on coasts who are at risk of flooding.

ResultsPlus
Examiner Comments

3 marks:

This response uses the resource in each paragraph to lift relevant data to support the point they are making. The reason provided in the first paragraph is not accurately expressed as the focus should be on coastal flooding. However there are two correct basic explanations provided in the second and third paragraph to reach the top of level 1.

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

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

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

(8)

In study 2c ~~we are shown that~~ it tells us that populations of some countries are more at risk from coastal flooding than others. I can see that ~~there is the USA~~ the amount of storm surges are high especially in china where there has been 392 in the 21st century

ResultsPlus
Examiner Comments

1 mark:

Awarded for basic AO4 "the amount of storm surges are high in China where there has been 392 in the 21st century" which is relevant information to support the question.

Question 3 (b)(ii)

In this question candidates are required to state one characteristic of a tropical cyclone, and the majority were awarded the mark. However, there were a number of responses where candidates demonstrated a misconception between a characteristic of the actual cyclone and a characteristic required for their formation. Responses about sea temperature, latitude, ocean depth were not awarded credit as they are factors required for formation not characteristics of the storm, eg. the eye.

(ii) State **one** characteristic of a tropical cyclone.

(1)

It has an eye in the centre.

ResultsPlus
Examiner Comments

1 mark:

Correct feature of a tropical cyclone identified.

(ii) State **one** characteristic of a tropical cyclone.

(1)

warm ocean water over 27°c temperature

ResultsPlus
Examiner Comments

0 marks:

This candidate states a factor required for their formation, not a characteristic of the cyclone.

(ii) State **one** characteristic of a tropical cyclone.

(1)

Coriollis Force

ResultsPlus
Examiner Comments

0 marks

This candidate states a factor required for their formation not a characteristic of the cyclone.

Question 3 (b)(iii)

Candidates are required to explain one reason tropical cyclones lose their energy when they reach land. They are awarded 1 mark for identifying a factor and a second mark to explain why this leads to a loss of energy.

As the question stem contains the fact they lose energy when they reach land, candidates were not awarded credit for repeating this point. Most candidates made reference to the temperature of the water and the lack of evaporation when cyclones reach land. However, some responses incorrectly stated that the temperature decreases on land which is why they lose energy which is not necessarily correct as land heats up faster than water. A proportion of responses also stated that the cyclones lose their energy as the Coriolis force is weaker over land which is also not accurate and so was not awarded credit.

(iii) Explain **one** reason tropical cyclones lose their energy when they reach land.

(2)

cyclones rely on warm, humid air and sea water to power them: on land, there is no evaporation of water, leading to a loss of spinning power as there is nothing to spin

ResultsPlus
Examiner Comments

2 marks:

Cyclones rely on warm, humid air and sea water to power them (1) on land there is no evaporation of water (1).

(iii) Explain **one** reason tropical cyclones lose their energy when they reach land.

(2)

It no longer has the warm sea temperature to use to increase in size.

ResultsPlus
Examiner Comments

1 mark:

It no longer has the warm sea temperature to use to increase in size (1). No further explanation provided.

(iii) Explain **one** reason tropical cyclones lose their energy when they reach land.

(2)

Because on land the temperature low to the ground it is similar to the ~~Pen~~ air temperature higher up. Cyclones require hot air to mix with cold air.

ResultsPlus
Examiner Comments

0 marks:

Incorrect response provided.

Question 3 (c)

For this question candidates are required to explain two reasons that preparation for 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.

(c) Explain **two** reasons preparation for earthquakes may be more effective in some countries than others.

(4)

1 Some countries may have a higher GDP, allowing them to create early warning systems and build ~~aaaa~~ aseismic infrastructure, thereby increasing their preparation.

2 The population may not be educated as well on evacuation procedures, for example, so the people themselves are ~~not~~ less aware of what to do in the event of an earthquake.

ResultsPlus
Examiner Comments

4 marks:

Higher GDP (1) allowing them to create early warning systems (1).

Population may not be educated (1) so people are not aware of what to do in the event of an earthquake (1).

(c) Explain **two** reasons preparation for earthquakes may be more effective in some countries than others.

(4)

1 Countries like HIC's will have more effective preparations as they can afford earthquake resistant buildings so reduce impacts like loss of homes and buildings.

2 A country may have experienced more earthquakes so are going to be more prepared and have better plans in place than a country that rarely experiences them.

ResultsPlus
Examiner Comments

4 marks:

HICs have more effective preparations (1) as they can afford earthquake resistant buildings to reduce impacts (1).

A country may experience more earthquakes (1) and so are going to be more prepared than a country that rarely experiences them (1).

(c) Explain **two** reasons preparation for earthquakes may be more effective in some countries than others.

(4)

1 If the country has more money to invest then they can install more effective and durable in buildings for example, so this is based on the development of the country

2 the level of ~~corruption~~ strong infrastructure the country has, as if the buildings are built with cheap materials the earthquake would cause more damage than when the houses

ResultsPlus
Examiner Comments

2 marks:

More money to invest (1) then they can install more effective and durable buildings (1).

No credit for the second point as it is just a mirror of the first point but for less developed countries and so cannot be double-credited.

(c) Explain **two** reasons preparation for earthquakes may be more effective in some countries than others.

(4)

1 ~~the~~ ~~the~~ place is located on a tectonic plate boundary ~~earthquakes will be more victims~~ HIC's will be more educated on signs of an earthquake so they will have alarms and drills put in place. They will also have activity on seismic graphs, enabling them to reduce damage caused.

2 LIC's will be uneducated and won't have the infastructure to warn ~~the~~ inhabitants of earthquakes. This results in a higher death toll. Lack of alarm systems and no drills put in place in school as many do not attend.

ResultsPlus
Examiner Comments

2 marks:

This is another direct mirror of the same point, therefore only one can be credited.

LICS won't have the infrastructure to warn people (1) which results in a higher death toll (1).

(c) Explain **two** reasons preparation for earthquakes may be more effective in some countries than others.

(4)

1 They may be more prepared for the outcomes so they would build stronger buildings that could hold up through everything.

2 They may be closer to the a hazardess area

ResultsPlus
Examiner Comments

1 mark:

Build stronger buildings (1). The development is too vague for credit.

The second point is too vague for credit, would need something like 'closer to a plate boundary' to award credit for this point.

Question 3 (d)

Candidates are required to explain one physical factor that can make people more vulnerable to natural hazards.

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 often find questions on physical vulnerability factors challenging. Where candidates stated a physical factor they were often awarded 3 marks as they were able to link this to why the impact would be more severe. However, a significant proportion of candidates stated an economic or social factor and therefore, were awarded zero marks. The most commonly used incorrect factor was population density with candidates often interpreting this as a physical factor.

(d) Explain **one** physical factor that can make people more vulnerable to natural hazards.

(3)

Proximity - those closer to the hazard itself will feel both it and its effects more violently. For example, those closer to the epicentre of an earthquake will experience more violent shaking, and therefore have a greater extent of damage, injuries, and death.

ResultsPlus
Examiner Comments

3 marks:

Proximity to hazard (1) will feel its affects more violently (1) and therefore have a greater extent of damage (1).

(d) Explain **one** physical factor that can make people more vulnerable to natural hazards.

(3)

living on a tectonic fault line or a plate margin will increase your vunrebility as your more likely to expriece ~~te for~~ tetonic plate movement leading to natural hazards

ResultsPlus
Examiner Comments

2 marks:

Living on a tectonic fault line (1) increases vulnerability as you are more likely to experience plate movement (1).

(d) Explain **one** physical factor that can make people more vulnerable to natural hazards.

(3)

if they are near plate boundary the are more vunerable dek to the movement of the plate

ResultsPlus
Examiner Comments

1 mark:

Near plate boundary (1). No credit for stating they are more vulnerable as this is provided in the question stem.

(d) Explain **one** physical factor that can make people more vulnerable to natural hazards.

(3)

~~During an earthquake~~, ~~the depth of the focus makes~~ ~~people~~ infrastructure and buildings makes people more vulnerable because may ~~cannot~~ may collapse onto people during a hazardous event i.e a lava bomb may land on them causing them to fall or they may ~~be~~ collapsed by the sheer force of the ground shaking in Earthquakes. If buildings

ResultsPlus
Examiner Comments

0 marks:

A common misconception is to provide a human factor instead of a physical factor. This response does not answer the question asked.

(d) Explain **one** physical factor that can make people more vulnerable to natural hazards.

(3)

if people may have a disability that could make them slower to evacuate, and due to this they may end up dieing if there is no help around. this could be seen in any natural hazard such as, earthquake, hurricane, or volcano.

ResultsPlus
Examiner Comments

0 marks:

The factor stated is social and not physical so no credit awarded.

Question 3 (e)

Most candidates were able to identify lava (flow) as the volcanic hazard shown in Figure 3b. Credit was not awarded for magma (flow) or pyroclastic flow.

Question 3 (f)

This question requires candidates to use Figure 3a, a resource showing the global distribution of volcanoes, to suggest two reasons for the distribution of volcanoes.

Candidates need to be reminded that when they are provided with a resource for these 4 mark 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 could be identified on the map. To gain the AO2 credit responses needed to explain why volcanoes occurs not just describe the type of volcano or state the type of plate boundary.

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

Suggest **two** reasons for the distribution of volcanoes.

(4)

1 Destructive plate margins → these are along the north americanplate → this ~~was~~ is when a oceanic plate subducts under, ~~the~~ a connenental one which causes pressure to build forcing magma to rise ~~and cools~~ which cools + forms new land building up volcanoes

2 Constructive plate margins → these are when plates pull apart which causes fissures in the rock from which magma escapes. Hotspots for example iceland amplify the effect of the ~~plate~~ volcanoes further.

ResultsPlus
Examiner Comments

4 marks:

Destructive margin along the North American plate (1) when oceanic plate subducts it causes pressure to build forcing magma to rise (1).

Constructive plate margins where plates pull apart allow magma to escape (1) for example in Iceland (1).

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

Suggest **two** reasons for the distribution of volcanoes.

(4)

1 Volcanoes occur along plate boundaries, namely where plates pull apart, when that happens, magma rises to the top and causes volcanoes to form.

2 Hotspots, ~~are~~ reason for example in the Pacific plate in figure 3b, hotspots are plumes of magma underneath the surface.

ResultsPlus
Examiner Comments

3 marks:

Where plates pull apart which allows magma to rise to the top (1). No AO3 credit as no specific locational evidence from resource provided.

Hotspots in the Pacific Plate (1) caused by plumes of magma underneath the surface (1).

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

Suggest **two** reasons for the distribution of volcanoes.

(4)

1 Volcanoes can be found on plate boundaries. This is because on destructive plate boundaries the oceanic plate is submerged (under the continental plate) and melts and then rises out of the continental plate as a volcano and on constructive plates magma rises out (between the plates).

2 Volcanoes are also found far from the plate boundaries as they are located on hot-spots. This is when a magma plume melts and thins the crust above it, creating volcanoes.

ResultsPlus
Examiner Comments

2 marks:

Oceanic plate is submerged under the continential plate and melts, then rises out the continential plate (1).

When a magma plume meets a thin area of crust it creates a volcano (1).

This response receives AO2 credit for each point but no AO3 credit as no specific locational knowledge is used from the resource.

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

Suggest **two** reasons for the distribution of volcanoes.

(4)

1 Many volcanoes are on oceanic-continental plate boundaries as these are where destructive plate boundaries are and hence the high pressure in the subduction zone causes volcanic eruptions.

2 Many volcanoes are found ~~at~~ in random locations due to hotspots forming there. Also, most volcanoes are found on plate boundaries as this is where pressure builds during plate movement.

ResultsPlus
Examiner Comments

1 mark:

(Destructive plate boundaries) where the pressure builds up in the subduction zone causes volcanic eruptions (1).

There is no specific locational evidence from the resource in the response and the second point is purely descriptive statements about hotspots and constructive plate boundaries with no explanation for why volcanoes are found at them. Therefore, no credit is awarded for the second point.

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

Suggest **two** reasons for the distribution of volcanoes.

(4)

1 Volcanoes are mainly ~~th~~ based around plate boundries. and when the plates move around the lava from the coure of the earth can come up to the surface and

2 course volcanoes. Volcanoes are also based around edges of continets or courtries because it is where the plaks are touching.

ResultsPlus
Examiner Comments

0 marks:

This response does not explain the reason why volcanoes occur in these locations, nor does it provide specific locational evidence from the resource.

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 study Figure 3c, a map showing the distribution of ash fall and text and photographs of impacts from the volcanic eruption. They use the information provided to explain the impacts of the eruption.

On occasion, responses steered too heavily towards impacts on people/economy rather than the environment. Few candidates made use of the map showing the area prone to ashfall which limited the depth of their response. Better responses used the map to begin to make links to the potential impacts on the coastal areas shown on the map.

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

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

Analyse the impacts of the volcanic eruption on the environment.

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

(8)

In Figure 3C, the potential impacts of a volcanic eruption on the environment are shown through the graph and descriptions. Some primary impacts such as pyroclastic flows and ash clouds can have significant long term impacts where ash settles and suffocates plants ~~of~~ or ~~pr~~ pyroclastic flows ~~high temperatures and~~ and lava flows high temperatures damage crops. This is evident through the descriptions stating $3.3 million crops were destroyed and lava destroyed large areas of vegetation. However, although short term impacts can result in loss of biodiversity and damage, in the long term ash deposited can increase the fertility of the land and therefore result in regrowth or agricultural growth. This is why the areas in black of the ash covering will be highly favourable in the long-term for vegetation growth and agriculture. Another example of this is after the 6-15 eruptions in 2010 where many bought agricultural land near the volcano in the years following the explosion. Volcanic eruptions also have a significant

effect on water pollution, ~~which because~~ where 24 rivers were silted with ash. This has potentially dangerous effects as ash can contain toxic elements which could potentially damage the be taken into ~~water~~ organisms and animals - An additional impact of eruptions can also be caused by lahars, a

(Total for Question 3 = 25 marks)

secondary impact due to snowmelt which causes a hot mudflow of debris - This can affect the environment due to ~~putting all over~~ washing away all vegetation and soil - Overall, although the short term impacts of volcanic eruptions may ~~not~~ initially cause destruction of the environment, in the long term this can cause more fertile land and vegetation growth.

TOTAL FOR SECTION A = 50 MARKS

ResultsPlus
Examiner Comments

8 marks:

There are three developed ideas in this response all linked to environmental impacts. This candidate also clearly makes a distinction between the short term and long term impacts this would have on the environment, demonstrating a clear argument. There is a clear judgement at the end of the response which justifies why they believe long-term impacts to be positive and the short-term impacts to be negative to reach the top of level 3.

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

Analyse the impacts of the volcanic eruption on the environment.

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

(8)

In figure 3c, we can see that after the erruption there was water polution from ~~vole~~ volcanic ash. This is because in most erruptions, the ash that is errupted is slightly acidic. when this dissolves in water and rivers, it can create a very dilute acid, which is unsafe to drink and irritating on animal ~~skin~~ skin.

In figure 3c we can see that $3.3 million of crops were destroyed. This is because sometimes during an erruption when the ash is slighly acidic, it can land on plants, this then not only blocks sunlight, but also burns through leaves, killing the plants.

In figure 3c, we can also see that near the base of the volcano, large amounts of vegetation was destroyed, this is because during an erruption, a lahar can form which is a fast moving mixture of water and rocks, which can easily hit and knock down trees and plants.

Lastly in figure 3c we can see that lava spread up to 3km from the craher, this is not very far. The reason for this is that composite volcanoes have lava with a high silica contents, making their lava thick and viscous, meaning it cannot travel as far.

(Total for Question 3 = 25 marks)

TOTAL FOR SECTION A = 50 MARKS

In conclusion, the main impacts of the eruption were ash spread and vegetation damage.

ResultsPlus
Examiner Comments

6 marks:

This response is predominantly just an explanation with each paragraph starting with a factor linked to the figure to gain AO4 credit and then a brief explanation for the impact to gain AO3 credit. There is a final sentence demonstrating judgement which has selected the two worst impacts in their view (rather than a generic 'they are all bad impacts') and this is enough to just reach the top of level 2.

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

Analyse the impacts of the volcanic eruption on the environment.

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

(8)

One impact of the volcanic eruption on the environment was the fall of ash. Figure 3C shows areas between 1km and 10km from the volcano were highly prone to ash fall. This could be a negative for the environment, as plants or animals are killed by the ash, or houses are destroyed, as their roof collapse due to falling ash. However, it could also have a positive impact, as the ash could improve soil fertility, helping farmers in the long term to grow crops.

Another impact was the destruction of vegetation by the eruption. Figure 3C states that "US $ 3-3 million of crops were destroyed", showing a large negative impact of the eruption on the environment. Figure 3C, also says, "Lava flowed up to 3km from the crater", suggesting the effect of lava not less than the ash. However it also says "239 vegetation species" could have been affected, suggesting the lava would've reduced the diversity of plants in the environment.

Another ~~one~~ impact was water pollution at the base of the volcano. Figure 3C states, "29 rivers... were silted with volcanic ash" which which made it "unsafe to drink". We

Can also see an animal in the source, suggesting this may affect local animals, as they would drink the water and become sick. The figure also says the ash 'irritated animal skin', further showing the negative impact on the environment.

ResultsPlus
Examiner Comments

4 marks:

The AO3 is more basic in this candidate's response. There is a considerable amount of space used to copy quotes from the resource which gains some AO4 credit but the explanation for each impact identified from the resource is simplistic and does not have the depth required to reach higher into level 2.

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

Analyse the impacts of the volcanic eruption on the environment.

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

(8)

After a volcanic eruption, it can take years to build back economies like agriculture. As shown in figure 3c, US$3.3 million of crops were destroyed. As shown in Figure 3c, 29 rivers were affected by volcanic ash. This makes it difficult for biodiversity to adapt, and it puts animals in the area at risk of death because this is their water source. As shown in Figure 3c, Lava flowed up to 3K destroying vegetation. This means all living things in the area will have a lack of food. As shown in Figure 3c 9,800 farmers were affected. This could lead to people moving from this area due to lack of work.

ResultsPlus
Examiner Comments

3 marks:

This response reaches the top of level 1 as there are three impacts with basic AO3 development for each. The first impact is most well explained with the last having very basic development. There is evidence of both AO3 and AO4 in this response enabling it to reach the top of level 1.

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

Analyse the impacts of the volcanic eruption on the environment.

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

(8)

- Volcanic eruption was 7KM away from the Alboy gulf however it went into the Lagonoy gulf which affects animals because the water is unsafe to drink

- Volcanic eruption also destroys farmers crops (US 3.3 Million dollars) which also destroys their first source of income Meaning that farmers can't provide for their families

ResultsPlus
Examiner Comments

2 marks:

There are two impacts with very simplistic AO3 linked to each to reach the middle of level 1. The first point is stronger as the candidate uses the scale on the Figure and make a specific link to an environmental consequence. The second point is less focused on the environment.

Question 4 (a)(ii)

Please note that the comments made for all question 4 parts also apply to all of question 5 and question 6. 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.

For this question candidates need to identify a risk they might need to have prepared for which does not require them to state a mitigation strategy. The focus of the question is not how the risk was managed.

(ii) State **one** risk the students should have prepared for when carrying out their river fieldwork.

(1)

Slippery rocks the students can slip on and fall into the water or hurt them selves

ResultsPlus
Examiner Comments

1 mark:

Slippery rocks (1)

ResultsPlus
Examiner Tip

Candidates only need to identify a risk, they do not need to state a mitigation strategy.

(ii) State **one** risk the students should have prepared for when carrying out their river fieldwork.

(1)

use a life vest

ResultsPlus
Examiner Comments

0 marks:

Use a life vest is a mitigation strategy. This candidate has not identified a risk.

(ii) State **one** risk the students should have prepared for when carrying out their river fieldwork.

(1)

going in groups

ResultsPlus
Examiner Comments

0 marks:

Going in groups is a mitigation strategy to prevent the risk of getting lost. The risk is not stated in this response and therefore, no credit can be awarded.

Question 4 (b)

This item requires candidates to calculate the range of the data shown in Figure 4/5/6b. Responses needed to show the working by evidencing subtraction of the smallest from the largest in the data. The working out credit was only awarded if candidates correctly identified the correct highest and lowest numbers, as this is a vital skill in the calculation of the range.

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

Question 4 (c)(iii)

This question requires candidates to suggest a reason for the relationship shown on the Figure. The first mark is awarded for identifying a relationship and a second mark for explaining why the relationship occurs.

Most responses were awarded 2 marks, however, some stated the relationship without offering any explanation resulting in only 1 mark being awarded.

(iii) Suggest **one** reason for the relationship shown on Figure 4c.

(2)

As the river velocity increases it erodes the river walls more quickly making it wider, and as width increases there is less resistance on the water, and more rest of water, so the velocity increases.

ResultsPlus
Examiner Comments

2 marks:

As the river velocity increases it erodes the river more quickly (1) making it wider as there is less resistance (1).

(iii) Suggest **one** reason for the relationship shown on Figure 4c.

(2)

As channel width increases.
river velocity also increases.

ResultsPlus
Examiner Comments

1 mark:

This response states the relationship without providing a reason for the relationship.

Question 4 (c)(i)-(ii)

(c)(i) Candidates are required to plot the two missing data plots. There was less evidence of candidates missing out the graph question this series, but there was still evidence this had occurred as, on occasion, best fit lines were drawn with no data plots drawn, suggesting the candidate had overlooked this question.

(c)(ii) For this question candidates are required to draw a line of best fit. Responses demonstrated less understanding of how to accurately draw a line of best fit with a considerable number of candidates leaving this question blank or turning the data plots into a line graph.

(c) (i) Study Figure 4b in the Resource Booklet.

Plot the data for sites 1 and 3, from Figure 4b (shown in the Resource Booklet), on Figure 4c (below).

(2)

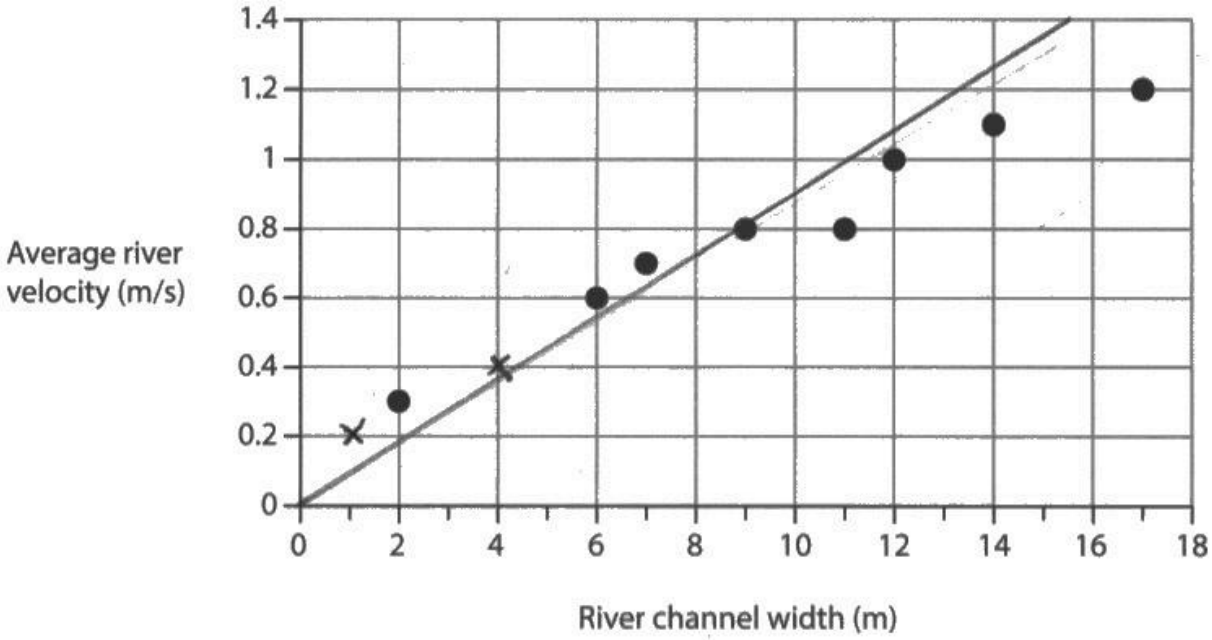

Figure 4c

Relationship between river width and average velocity

(ii) Draw a line of best fit on Figure 4c.

ResultsPlus
Examiner Comments

(i) 2 marks:

Both data points are correctly plotted.

(ii) 0 marks

The line of best fit is not within the tolerance stated in the mark scheme.

(c) (i) Study Figure 4b in the Resource Booklet.

Plot the data for sites 1 and 3, from Figure 4b (shown in the Resource Booklet), on Figure 4c (below).

(2)

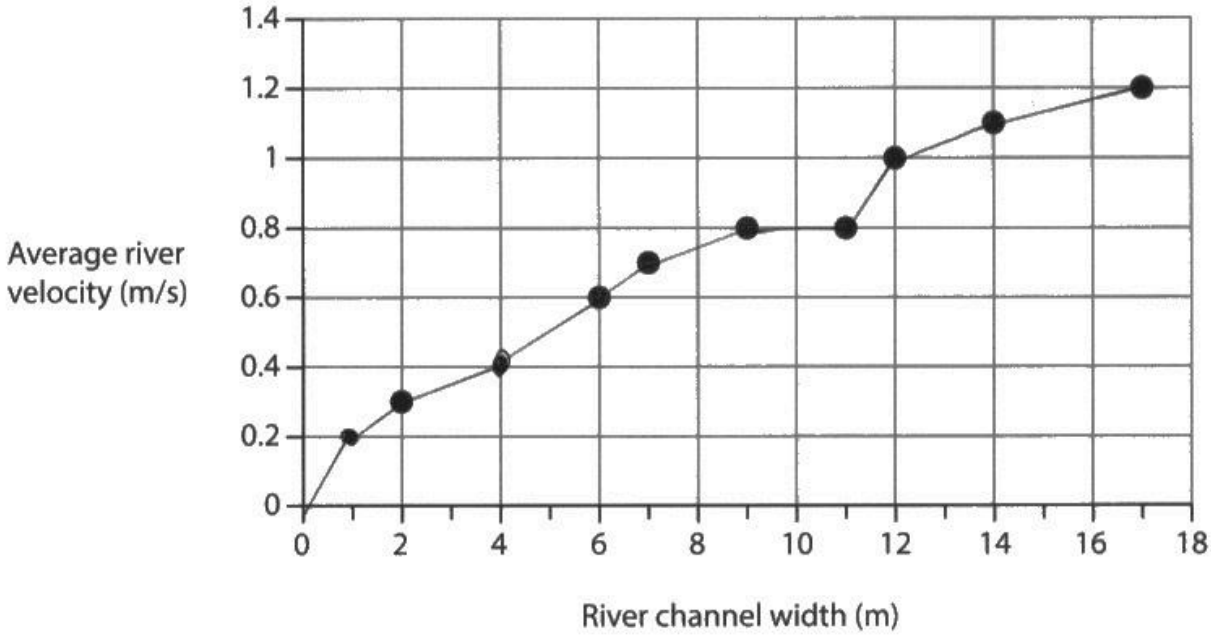

Figure 4c

Relationship between river width and average velocity

(ii) Draw a line of best fit on Figure 4c.

ResultsPlus
Examiner Comments

(i) 2 marks:

Both data points are correctly plotted.

(ii) 0 marks:

The candidate has not drawn a line of best fit but created a line graph.

(c) (i) Study Figure 4b in the Resource Booklet.

Plot the data for sites 1 and 3, from Figure 4b (shown in the Resource Booklet), on Figure 4c (below).

(2)

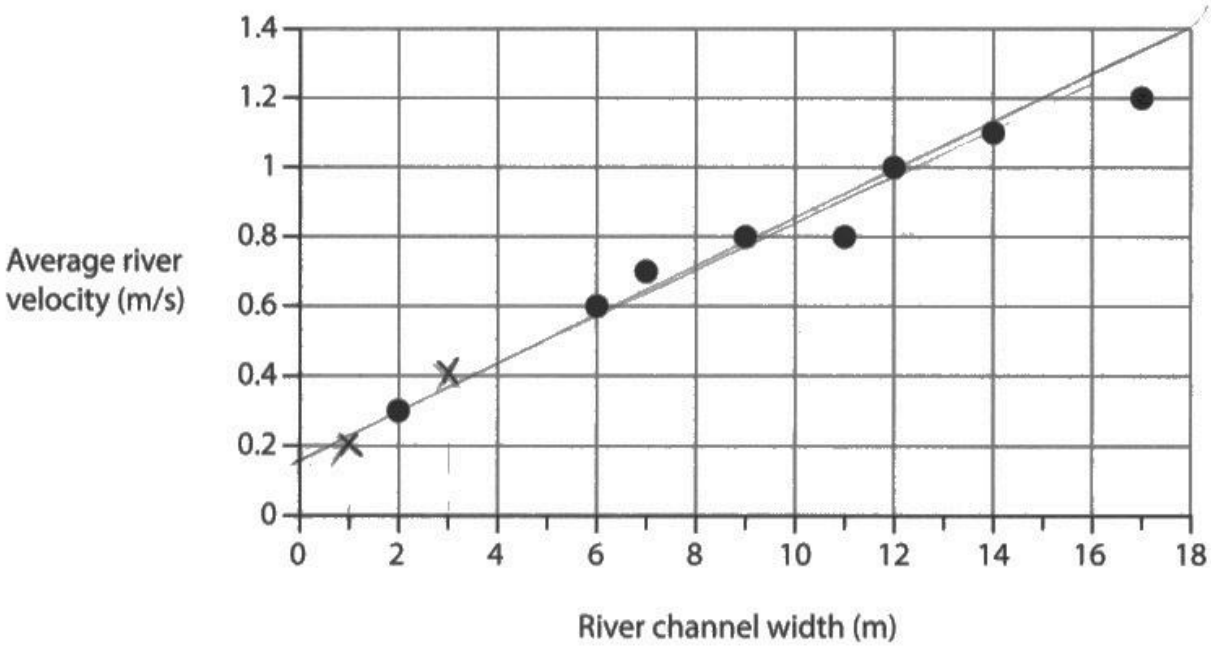

Figure 4c

Relationship between river width and average velocity

(ii) Draw a line of best fit on Figure 4c.

ResultsPlus
Examiner Comments

(i) 1 mark:

The data for site 1 is correctly plotted but the data for site 4 is incorrect.

(ii) 1 mark

The line of best fit is within the tolerance stated in the mark scheme.

Question 4 (d)

For this question candidates are required to explain one other primary data collection method they might have found useful in their enquiry. Candidates are awarded 1 mark for identifying a variable/data collection method and up to 2 further marks for explaining why this method would help support the enquiry.

Some responses identified a data collection method but went on to describe how the data is collected rather than explain why this data would be useful in the wider context of the enquiry.

Some candidates wrote a response about one of the variables shown in either Figure 4/5/6a or Figure 4/5/6b – this meant they were awarded zero marks as the questions asked for 'one other' method.

(d) Explain **one other** primary data collection method students might have found useful in their river enquiry.

(3)

Use a clinometer to measure the gradient, as from this they will have been able to see if gradient also decreased from the river source and if it had an impact on river velocity.

ResultsPlus
Examiner Comments

3 marks:

Measure the gradient (1) to see if the gradient decreases (1) and if it has an impact on river velocity (1).

(d) Explain **one other** primary data collection method students might have found useful in their river enquiry.

(3)

They could have drawn gield sketches. ~~To~~ This can be used to record ingormation about each site to compare them later on. This can be used to represent has gradient and vegetation cover changes ~~area~~ along the river channel.

ResultsPlus
Examiner Comments

3 marks:

Field sketches (1) to record information about each site to compare later on (1), this can be used to represent the gradient (1) and vegetation cover (1).

(d) Explain **one other** primary data collection method students might have found useful in their river enquiry.

(3)

They could lay a heavy metal chain onto the river bed ~~to the river~~ and let it sink down to measure the wetted perimeter of the river channel and this can be used to calculate cross section ~~of~~ area.

ResultsPlus
Examiner Comments

2 marks:

Wetted perimeter (1) can be used to calculate the cross section (1). The link to why this would support their enquiry is not provided they instead describe how the data collection method works which is not the focus of the question.

Wetted perimeter is awarded as a different variable to channel width which is already shown in the Figure.

(d) Explain **one other** primary data collection method students might have found useful in their river enquiry.

(3)

~~To measure~~ to measure the wetted perimeter, Students used a metal chain, ~~to measure~~ This is useful as the metal causes the chain to sink to the bottom so an accurate reading can be made

ResultsPlus
Examiner Comments

1 mark:

Measure wetted perimeter (1).

The rest of the response describes how the data collection method works or states why it is accurate which is not the demand of the question.

(d) Explain **one other** primary data collection method students might have found useful in their river enquiry.

(3)

They may choose to measure depth, by dropping a metre ruler in the water a recording the measurement, as it is a characteristic that will increase further downstream; due to friction or saltation.

ResultsPlus
Examiner Comments

0 marks:

This candidate states they would measure depth, unfortunately this variable is already measured in the enquiry, as shown in Figure 4a.

Candidates need to be aware to look at all the variables measured for these types of questions on unfamiliar fieldwork questions to ensure they are suggesting **one other** type.

Question 4 (e)

It is important to remind candidates to write their responses under the correct enquiry context; a proportion wrote coastal enquiry responses in the river enquiry and hazardous environments enquiry questions. This limited their responses as only generic statements plausible to the enquiry context being answered could be credited.

There were also a small proportion of candidates who wrote tectonic responses for question 6 and the specification is clear that the enquiry needs to be focused on extreme weather events. This resulted 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 data collection methods used in their own geographical enquiry.

There were some excellent responses to this question showcasing some really interesting fieldwork, with the majority of responses being focused on data collection methods. However, a proportion of candidates struggled to evaluate both accuracy and reliability in their response. It would support candidates with their responses if they were clear on the difference between accuracy and reliability as they would be able to provide strong evaluations of their techniques.

Candidates are provided 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 a response for full marks.

(e) You have studied river processes as part of your own geographical enquiry.

Evaluate the accuracy and reliability of your data collection techniques.

(8)

Geographical enquiry title

How do characteristics change along the course of a river.

Firstly, we had decided to use systematic sampling along every 200m. Though we can appriciate this approach is slightly biased it would have given as a larger range of changes apon an equid distance giving as a more accurate result.

Along each site we had measured river width, depth, velocity and sediment size. Staring at sight one where we had measured the depth using a tape measure with one teammate holding each side (at the bank). We had repeated this to ensure accuracy and liability. However we can appriciate that there was room for human error as one of us may have not been holding the tape measure as tight as possible resulting in an potential inna accurate result.

We then moved on to measure the river depth using a metre stick. However again we can appriciate that we may have been pressing to hard on the sediment causing it to break and changing the original way in which the river depth would have been.

We had ~~also~~ also again measured the river velocity. Using a wine cork so it could float easily on the water and a step watch. Here we can appriciate that there was room for both environmental and human error. As we had went in winter where the wind speed was relatively high giving our result less accuracy. We can also appriciate that we may not have started the step watch at the right time therefore giving us again an inaccurate result.

(Total for Question 4 = 20 marks)

Lastly, we had measured sediment size. We did so by collecting rocks ~~at each~~ and catagorising their shape. We did so by measuring each rock as a group to eliminate bias. However, this may have lead to innaccuracies as we had all been looking at it from different angles, therefore, it may have just been better for one of us to do it.

We then repeated this at each site inorder to most accurately compare the change in river characteristics along the course. Ultimately though we can appriciate there was room for human and environmental error, our hypothesis were met as the depth, and width and velocity increased along the course.

ResultsPlus
Examiner Comments

8 marks:

This candidate works through each of their data collection methods and evaluates each in turn. They provide specific examples for limitations in the method as well as strengths of each method. They make reference to their sampling strategy and the impact this may have had on the reliability and accuracy of their results. Towards the end of the response the candidate explains the reasons for the limitations in more depth introducing both human and environmental error in their evaluation of their river velocity measurements.

Although, the conclusion at the end is not started with the conventional 'In conclusion...' there is a concluding statement "Ultimately though we can appreciate there was room for human and environmental error but our hypotheses were met as depth, width and velocity increased along the course."

This is a strong response which remains focused on the question throughout, demonstrating clearly that the candidate has completed fieldwork and is well aware of the limitations and strengths of their data collection methods.

(e) You have studied river processes as part of your own geographical enquiry.

Evaluate the accuracy and reliability of your data collection techniques.

(8)

Geographical enquiry title

Investigating changes to the characteristics of the Hilden Brook, Tonbridge with increasing distance downstream

The accuracy and reliability of my data collection techniques enjoys a ~~mixture~~ varying degree of effectiveness.

Firstly, my measurements of bedload size were likely highly accurate and highly reliable. I used a pair of callipers to measure the longest diameter of randomly selected pieces of bedload at several sites ~~d~~ along the course of the river. The use of callipers made my measurements precise, and by sampling several random pieces of bedload ~~s~~ I ensured my results were reliable.

However, my measurements of river flow velocity was a different story entirely. The use of a tennis ball float to time between 2 ranging poles 10m apart was likely highly ~~inaccurate~~ unreliable, due to interference from submerged rocks and overgrown foliage which the tennis ball collided with. As well as the error in timing caused by an easily distracted assistant. Additionally, the accuracy of my measurements is also likely to be poor, as the poles were measured inaccurately and the ball did not travel in a straight line between them. Combined with other other minor problems, such as delayed reaction time and parallax error, my results are very likely to be both highly inaccurate and unreliable when

measuring flow velocity. The use of an impellor would have been much better.

Finally, my field sketches are also likely to be highly inaccurate and unreliable due to my lack of artistic talent. Bad drawings produced sketches that were not very accurate, and as well as having varying degrees of detail, therefore making them unreliable and inaccurate.

Overall my data collection techniques were largely inaccurate and

9

(Total for Question 4 = 20 marks)

unreliable, such as my field sketches and flow velocity measurements due to a lack of equipment and human error, however both issues were alleviated when measuring bedload size. This therefore gives my data presentation techniques a varying degree of accuracy and reliability.

ResultsPlus
Examiner Comments

8 marks:

This candidate evaluates each of their data collection techniques as they go along in their response. They use clearly evaluative language throughout and are very clear where the limitations of each method have occurred. This candidate is able to distinguish between methods which were more accurate 'their measuring of bedload' and methods which were much less accurate 'measuring river flow'.

They have a clear concluding statement at the end to reach the top of level 3.

(e) You have studied river processes as part of your own geographical enquiry.

Evaluate the accuracy and reliability of your data collection techniques.

(8)

Geographical enquiry title

How does the characteristics of river flow changes as it goes down stream.

We used dog biscuit to measure the velocity of the river at different sites. The advantages of using this method is that it is easy to do and it is biodegradable, so multiple set of data can be taken for the results which makes it more reliable. However, it is not very accurate as the dog biscuit could be caught by catchment of vegetation or human mistakes in take the reading and stopping the stop watch (used for measuring the time taken for dog biscuit to travel a ~~set~~ 10 m). So a better alternative it is to use a hydroprop to measure the velocity which is more accurate as it eliminates the human risks of human errors.

We also used a meter ruler to measure the depth of the river. This method is quick and easy, for us, which enable us to record a larger set of data and to take repeats to take an average excluding anomalies. However, it is not very accurate as it might be stuck into the mud or not the river bed, leading to anomalies and

there is a risk of human error when taking the reading of the meter ruler. So an improvement would be to use a metal chain to put on the river bed, and measure the depth of metal chain to the surface, then add on the diameter of the chain. this would make our result more accurate.

Overall, our method is reliable but not accurate due to the equipment used which has a high risk of human errors.

(Total for Question 4 = 20 marks)

ResultsPlus
Examiner Comments

6 marks:

This candidate evaluates two methods with some detail to their evaluations for which elements of each data collection technique was accurate/reliable and which aspects were not. Although this candidate has a conclusion at the end this does not automatically place the response into level 3; they need to demonstrate a well developed argument for a range of techniques to reach level 3 and this responses would require at least one more evaluated data collection method to reach level 3.

(e) You have studied river processes as part of your own geographical enquiry.

Evaluate the accuracy and reliability of your data collection techniques.

(8)

Geographical enquiry title

investigating river ~~regimes~~ Processes in the river Darent.

To gain accurate and reliable results, one should repeat each investigation - e.g. when finding out the speed of the river at each course by using stopwatch and measuring tape to see how quickly rubber ducks travel 300 cm, you must repeat this numerous times with biggest starting areas and rubber ducks to gain a wide yield of ~~results~~ because as ~~results~~ amount of measurements increase so does reliability. Once you have gained your data you should create a Mean and a range to investigate the trends in your results. After this you should create a graph of your results, preferably a line graph so that you can compare and contrast you results. However bar graphs are also good because they are simple to understand and easy to read.

After collecting your own data you can compare it with others' data by searching up secondary data such as websites and magazines.

To conclude it is most important to have a wide range

of results as it increases accuracy and making graphs and comparing your data to others' can be helpful to double-check your reliability.

ResultsPlus
Examiner Comments

4 marks:

This response focuses on one data collection method and attempts to evaluate the strengths and limitations of the method. However, this is vague in places and lacks clarity of exactly what makes a method reliable/accurate. Some of the answers move onto different enquiry stages and are not linked to the data collection method. There are some developed statements which are aspects relevant to accuracy/reliability for this response to move into the bottom of level 2.

(e) You have studied river processes as part of your own geographical enquiry.

Evaluate the accuracy and reliability of your data collection techniques.

(8)

Geographical enquiry title

how rivers change long course

When doing the river enquiry of the river tilling - bourne, we chose two locations, one in the middle and one in the lower course of the river.

We used a systematic sampling for the depth of the river, measured the width with a measuring tape and measured velocity with a cork and hydroprop.

The data for velocity with the hydroprop was effective but the cork ~~was~~ was too influenced by the wind so less accurate. The depth was good but not accounting for boulders will and the

ResultsPlus
Examiner Comments

3 marks:

This candidate has unfortunately run out of time but the start of their unfinished response demonstrates they are aware of what makes a data collection method accurate/reliable. They briefly explain their sampling strategy and are aware using a hydroprop makes their velocity data more reliable but recognises the weather conditions may have affected the accuracy of their velocity data.

This is sufficient to reach the top of level 1 demonstrating basic evidence of both AO3 and AO4.

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 this year answering questions based on a coasts enquiry in both the river and hazard enquiry questions. This limited responses as marks could only be awarded for generic ideas plausible for the enquiry context being answered.
- Make specific reference to the resource shown for 4 mark questions in section A.
- 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.
- Be confident in drawing lines of best fit.
- Be confident in explaining relationships in data.
- 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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