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Introduction

The first sitting of this specification for Pearson Edexcel International GCSE Geography took place in 2019. The series in 2023 was the first full series since 2019 with no adaptations or mitigations; this series was therefore the first since 2019 to include both familiar and unfamiliar fieldwork questions. This Examiner's report is intended to provide an insight into performance on Paper 1: Physical Geography, in particular, analysing the majority of questions in terms of what went well and where common mistakes and underperformance were evident.

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 which are 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 Assessment Objective (AO) distribution, particularly for the longer response 8-mark questions, to ensure they access the full range of marks available.

Question 1 (b)(ii)

Candidates accessed this question well and were able to state one type of erosion. On rare occasions, candidates stated a type of transportation.

Question 1 (c)

A large proportion of candidates were able to achieve 2 marks on this question. The most common responses were focused on agriculture and industry.

(c) Explain **one** way human activity affects water quality.

(2)

Human activity can affects water quality by wasting water and as the Population increase demand will also increased for the water.

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Examiner Comments

Wasting water and increasing population does not necessarily mean the quality has been affected.

0 marks

(c) Explain **one** way human activity affects water quality.

(2)

By dumping waste and plastic into the water.

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Examiner Comments

Dumping waste/plastic into water (1).

1 mark

(c) Explain **one** way human activity affects water quality.

(2)

human activity can take away the amount of water in a river by using it up. Hums may throw waste products or chemicals in the river pollutes it and ~~pollute~~ my change the cleanliness and pH of the river.

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Humans throw waste/chemicals in the river (1) may change pH of the river (1).

2 marks

(c) Explain **one** way human activity affects water quality.

(2)

Humans use pestisine ~~sto~~ on plants which then ends up in a river making the water unpure anel not useable. Also it can kill habitats.

ResultsPlus Examiner Comments

Humans use pesticides on plants which ends up in a river (1) making the water unpure/unusable (1).

2 marks

Question 1 (d)

This question required candidates to use a resource (Figure 1a) showing a diagram of a drainage basin with some key features labelled and explain two ways a river changes along its course. The first mark was awarded for identification of a change with the second mark awarded for the reason for the change.

A large proportion of candidates were able to achieve 4 marks; the most common responses were focused on velocity, width and depth.

Some candidates did not explain the reason for the change instead describing the difference in more detail e.g. what the characteristic is like in the upper, middle and lower course.

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

Explain **two** ways in which a river changes along its course.

(4)

1 ~~River~~ The main river divides into tributaries, the point where this happens is called confluence. The river in the middle course is has less deep and less wider river channel compared to lowercourse but more than upercourse.

2 The river in the lower course has lower river velocity and discharge.

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Examiner Comments

2 marks for first point. The second point is incorrect.

River has confluences in the middle course (1) means middle course is deeper than upper course but shallower than lower course (1).

2 marks – 1+1

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

Explain **two** ways in which a river changes along its course.

(4)

1 Lower course dye to deposition

2 Middle course because this is erosion happens and the chang of a river'

ResultsPlus
Examiner Comments

No clear change identified.

0 marks

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

Explain **two** ways in which a river changes along its course.

(4)

1 The steepness changes. In the upper course, the river is very steep. The steepness decreases down the middle and lower course.

2 Velocity. The river's velocity in the upper course is greater than in the middle course and the lower course. The velocity decreases down its course.

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Examiner Comments

The first point states a correct change:

'Upper course is very steep, steepness decreases down the middle/lower course' (1)

There is no explanation for why this occurs for the development mark.

The second point is incorrect as velocity increases downstream.

1 mark – 1+0

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Examiner Tip

Ensure candidates avoid the common misconception that rivers have lower velocity and travel slower downstream.

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

Explain **two** ways in which a river changes along its course.

(4)

1 The gradient of the river becomes less steep and therefore its river profile is concave meaning it ~~gets~~ is less steep at the bottom of the river when compared to the source, where the river starts and it is more steep.

2 ~~[illegible]~~ The river widens ~~[illegible]~~ ~~it~~ throughout the river course as ~~at the~~ in the upper course ~~source~~ it is quite skinny in comparison to the middle and lower course before a delta forms

ResultsPlus
Examiner Comments

This is an example where the candidate describes two changes, but does not explain the reason for the change and therefore, does not achieve the development credit.

2 marks – 1+1

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

Explain **two** ways in which a river changes along its course.

(4)

1 Many tributaries join on a point making the river discharge increase

2 River divides into many tributaries towards the end. Also becomes deeper and wider towards the end

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Examiner Comments

Tributaries join (1) making discharge increases (1) = 2 marks

The second point has two different changes but no explanation for either so gains one mark for either:

'river divides into many tributaries towards the end' (1) OR 'also becomes deeper and wider towards the end' (1).

3 marks – 2+1

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

Explain **two** ways in which a river changes along its course.

(4)

Figure 1a shows that

1. The river discharge increases with distance downstream as more tributaries join together at the confluence increasing the volume and speed of the river.

Figure 1a shows that

2. The channel width will increase as you go downstream because the gradient of the slope gets less steep, meaning that there will be more lateral erosion eroding the banks.

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Examiner Comments

Discharge increases (1) as more tributaries join together (1) = 2 marks.

Channel width increases (1) more lateral erosion of banks (1) = 2 marks.

4 marks

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

Explain **two** ways in which a river changes along its course.

(4)

1 figure 1a shows the river widening this is due to abrasion ~~cause the~~ eroding away at the bank

2 figure 1a also shows 3 tributaries joining the river, this will lead to an increase in River discharg going down stream

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Examiner Comments

River widens (1) due to abrasion eroding bank (1) = 2 marks

Tributaries join the river (1) leading to increase in discharge (1) = 2 marks

4 marks

Question 1 (e)

Candidates were able to access this question well with a significant proportion achieving full marks. Candidates had a strong grasp of the reason why the largest material is deposited first after a flood.

(e) Explain how deposition leads to the formation of levees.

(3)

When the river is reaching to it's final stages near the mouth or sea there is a decrease in the river discharge river gradient river volume ~~but~~ thus the ~~mate~~ weathered materials carried by the river are now dropped off around it's drainage basin. the deposited ~~drop~~ off form divisions of the river leading to sea this is called levees

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Examiner Comments

This candidate confuses deposition at the mouth as the river enters the sea with levee formation due to flooding and therefore explained the incorrect process.

0 marks

(e) Explain how deposition leads to the formation of levees.

(3)

This occurs on low land area when river flows at low velocity. This is when the ~~river~~ materials are deposited on the river banks ~~raising the~~ deepening the river channel and raising the river banks leaving behind a levee.

ResultsPlus
Examiner Comments

Although unclearly expressed and no clear sequence of formation, this response provides the idea of low velocity and material deposited on banks increasing their height to gain a mark.

1 mark

(e) Explain how deposition leads to the formation of levees.

(3)

As flooding occurs, the velocity of the river decreases due to friction of the water level rises. This causes the river to deposit sediment on the banks of the river. Over time, more flooding builds up this sediment (alluvium) to create raised banks or levees.

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Examiner Comments

Flooding occurs (1) velocity decreases due to friction causing river to deposit sediment (1) over time more flooding builds up sediment (1).

3 marks

Question 1 (f)

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

Question 1 (g)

Candidates had a secure knowledge of the different causes of river flooding. There were occasions where candidates explained coastal flooding which had no relation of river flooding and this was awarded zero marks. A minority of candidates explained a factor which reduces flooding e.g. having lots of vegetation increases interception. These responses were awarded zero marks.

(g) Explain **two** causes of river flooding.

(4)

1 An earthquake can cause a river to flood becauses it makes the bottom of the river move around then ends up flooding

2 The atmospherical hazard can cause a river to flood ~~becaye~~ because they would push the water towards the houses close to the ocean and flood.

ResultsPlus
Examiner Comments

This response is not relevant to causes of river flooding giving the idea of flooding from a tsunami and flooding from a tropical cyclone creating a storm surge.

0 marks

(g) Explain **two** causes of river flooding.

(4)

1 it can be caused by heavy rain

2 it can be caused by human construction

ResultsPlus
Examiner Comments

Caused by heavy rain (1).

The second point is too vague for credit and needs more idea about what type of construction.

1 mark

(g) Explain **two** causes of river flooding.

(4)

1 Impermeable rocks cause for Flooding because water does not get absorbed by the ground during rainfall. Leading to large amounts of water entering the river.

2 High river discharge can cause for floods because the river banks burst, which make the water leaks out of the river in large amounts.

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Examiner Comments

2 marks for the first point:

Impermeable rocks (1) as water isn't absorbed by ground leading to large amounts reaching river (1) = 2 marks.

The second point does not gain credit as there is no cause for the high discharge and then goes on to describe what a flood is.

2 marks – 2+0

(g) Explain **two** causes of river flooding.

(4)

1 Over rainfall which can cause river flooding.

2 By blocking the river from flowing.

ResultsPlus
Examiner Comments

Over rainfall which can cause flooding (1).

By blocking the river from flowing (1). This is enough for the idea of trees or bridge arches narrowing flow.

2 marks – 1+1

(g) Explain **two** causes of river flooding.

(4)

1 Weather - is certain areas on the Earth, it rains more. These places are at greater risk, which cause more flooding.

2 [redacted]/Rock type - If rain water cannot penetrate the soil, there while be surface runoff, which will cause flooding.

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Examiner Comments

Some areas get more rain placing them at greater risk (1).

If rainwater cannot penetrate the soil (impermeable) (1) there will be surface runoff which will cause flooding (1) = 2 marks.

3 marks – 1+2

(g) Explain **two** causes of river flooding.

(4)

1 One physical cause would be heavy rainfall, as there is increased infiltration, leading to saturated soil, leading to increased surface run-off, leading to a shorter lag time and a more rapid increase in river discharge. This increases the likelihood of a flood.

2 One human cause would be the construction of infrastructure, as more impermeable surfaces such as concrete and asphalt are built, less infiltration can occur. In the case of a storm, this increases surface runoff, reduces lag time, and increases how rapidly river discharge increases which increases the likelihood of a flood.

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Examiner Comments

Two distinct causes with clear explanation of both causes.

4 marks

(g) Explain **two** causes of river flooding.

(4)

1 extreme rainfall can lead to flooding as the river discharge increases and if the river cannot hold all the excess water it can burst its banks and flood

2 ~~human alteration can also~~ deforestation can also cause flooding as there's ~~more~~ less interception and therefore more surface run off, so the river has a greater discharge, maybe too much, so it can flood

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Examiner Comments

Extreme rainfall (1) can lead to flooding as the river discharge increases (1) = 2 marks.

Deforestation (1) less interception and more surface runoff increases discharge (1) = 2 marks.

4 marks

Question 1 (h)

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 candidates to apply their geographical understanding to the context shown in the resource.

Many candidates clearly used the resource to describe the areas of the USA with high and low water usage and often were able to link this to plausible reasons e.g. population size, amount of agriculture and climate were the most common reasons developed.

Several candidates used the information on water use in the USA to make links to how level of development influences water usage, linking this to the challenges this can create for developed countries today, but also emerging/developing countries in the future. Some candidates also made links to the role of climate change in making these challenges more significant in the future.

To access the higher marks, candidates needed to go beyond simply describing what is shown in the resources, but provide several clear developed reasons for challenges in managing water in the 21st century. The command word 'analyse' needs to be addressed to achieve full marks and often candidates found this demanding as there was often minimal judgement demonstrated in candidate responses.

(h) Study Figure 1c and Figure 1d in the Resource Booklet.

Analyse reasons why water management in the 21st century can be challenging.

Refer to the resources in your answer.

(8)

The water management may be challenging due to the huge demand for water and lots of resources needed to satisfy them. Given that 1 gallon of water is equal to 4-5 litres means that the USA in figure 1c and 1d use a large amount of water and may be hard to manage if it's not equally divided, whereby in the USA the water used in mining and agriculture compared to irrigation and livestock has a huge difference or power being the most consuming meaning the other resources may lack enough water at times.

ResultsPlus
Examiner Comments

This response has clearly looked at the resources provided and picked out a couple of patterns directly from the resources with no development.

1 mark

(h) Study Figure 1c and Figure 1d in the Resource Booklet.

Analyse reasons why water management in the 21st century can be challenging.

Refer to the resources in your answer.

(8)

One of the main ~~resoun~~ reason for water to become more challensing on managment is that because of a large amount grow of population.

When there is an increasment of population the need and want of water increases and as it is displased on ~~the~~ figure 1c the cities with large number of population have more use of water such as texas and California but for cities that have less population than those country by a difference of arounz 18,000,000 gallons of water use per day. The cities with mid rate of population have less use of water than the others. countries ~~this~~ ~~This map shows~~ +

Use of data from resource linking population and water use in different states with a basic point regarding the challenge increasing as population increases.

2 marks

figure 1c, shows us the country with the largest ~~water~~ water withdrawals, in million gallons per day is Texas and California which ~~withdraws~~ a water withdrawal of 20,001 to 28,800 million gallons of water per day. And with the countries with the next largest water withdrawal are: Idaho, Colorado, Arkansas, Florida, North Carolina, Michigan, Illinois and New York. A

America has a huge demand ~~of~~ for water, shown in figure 1c and 1d, an the average house hold in the USA goes through 350 gallons of water per day, power, farming and domestic supply are the top consumers.

The realon why water managment in the 21st century can be challenging is because, ~~they~~ clean ~~that~~ water could not be acceled due to contamination back then.

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Examiner Comments

The AO4 is stronger in this response than AO3. Two clear patterns are selected from the resources and a basic idea linked to USA having a huge demand (implying this is a challenge) and a point at the end about lack of access to clean water creating a challenge.

3 marks

(h) Study Figure 1c and Figure 1d in the Resource Booklet.

Analyse reasons why water management in the 21st century can be challenging.

Refer to the resources in your answer.

(8)

Figure 1c illustrates ~~how much~~ that the amounts of water being used varies from country to country in the USA. Figure 1c shows us that ~~a lot of~~ most countries use about 2,000 to 28,800 million gallons of water per day which is a great amount where as only a few countries use upto 2,000 litres of water per day.

Figure 1d states that America has a huge demand for water which is true. It also states that the Average American uses 99 gallons of water per day while the world's poorest live on less than 2.5 gallons of water per day.

Managing water in the ~~th~~ 21st century can be challenging because population growth is rapid. This increases the demand for water. Not only that but in developed countries a lot of technological devices are used. Figure 1d shows us that 49% of the water being used in America is for power. and that 32% is for irrigation and livestock. This percentage is high because due to an increase in population there has to be an increase in food supply too. Not a lot of water is required for industrial, ~~and~~ mining and aquaculture purposes. These account for only 7% of the water being used in America. This is because America is a developed country and it mostly

depends on the ~~secondary~~ tertiary and quaternary sector
Water management in the 21st ~~th~~ century is challenging because water demand is higher than water supply. Not everyone gets a good supply of water. When some areas are more developed than others, these developed areas require more water and they are financially stable enough to obtain it. This causes some areas to be supplied well with water and leave others without a water supply. **(Total for Question 1 = 25 marks)**

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This response clearly engages with the resources and selects accurate information to support the points.

There are three key reasons included: population growth, being a developed country, being a water intense society. This response lacks the analysis required for top Level 2/3.

5 marks

(h) Study Figure 1c and Figure 1d in the Resource Booklet.

Analyse reasons why water management in the 21st century can be challenging.

Refer to the resources in your answer.

Growth
water po

(8)

Water management is how you store and use the water ~~use~~ that is essential for life.

Water management will be challanging in the 21st century because of the ~~constant~~, rapid growth in population. "Average Americans use 99 Gallons of water per day... The worlds poorest Live on 2.5 gallons of water per day." This is to highlight the amount of water used by the population and as ~~the~~ population ~~gro~~ grows more and more so will the demand of it. Therefore more water will be used if that continues it may lead to a water deficit where demand of water exceeds the supply. The country ~~Secondly~~ usa's 2 states California and ~~Taxes~~ Texas use from "25,001 to 28,800 ~~gallons~~ ~~of water~~ million" Gallons of water a day This may be ~~a~~ not only because of consumption but also wastage of water. Many houses end up using up more water than they may need. This may happen because they may forget to close the tap when doing something else.

Conclusively some countries such as USA ~~have~~ enjoy a ~~surp~~ water surpluss - ~~while others~~ supply exceeds demand while ~~like~~ ~~suffer due to lack of water~~ - ~~water defitic~~ water ~~defetic~~ defecits ~~a~~ - [illegible] demand is higher than supply. Many countries suffer this and if USA goes on ~~like~~ [illegible] an continues this high consumption

of water they may face further on face a water deficit etc.

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Examiner Comments

This response uses some 'analysis' language in places e.g. 'therefore', 'conclusively' to show an element of judgement within their response.

There is clear interpretation of the resources provided and facts from these are used to support points about population growth, consumption/wastage, supply/demand, therefore reaching top of Level 2.

6 marks

(h) Study Figure 1c and Figure 1d in the Resource Booklet.

Analyse reasons why water management in the 21st century can be challenging.

Refer to the resources in your answer.

(8)

There is a high demand for water in America, as seen in both figure 1c and 1d. This is due to population growth, increased standard of living and agriculture.
The most significant factor as to why water management in the 21st century can be challenging is population growth. The population is growing rapidly and therefore the demand for water is also increasing. People rely on water to live and this source is very useful, not only for that, but many other uses for example domestic, leisure, industrial and agriculture. Another factor as to why water managment in the 21st century can be challenging is because of an increased standard of living and quality of life. The USA is a developed country and many wealthy people live there and they don't value water as ~~little~~ much as other countries. As seen in figure 1d, the average American uses 99 gallons of water per day whereas people in developed countries live on less than 25 gallons a day. This statistic shows how careless some Americans are with the amount of water that they use. Agriculture also needs a lot of water because crops and also livestock need it. This type of water use is acceptable, however other types are less significant and more selfish as they are for personal use.

In conclusion, people should manage their water in the 21st century and ~~city~~ mostly use it for essential things. Especially Texas and California, as shown in figure 1c as they use 20001 – 28800 million gallons per day.

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There is clear analysis in this answer which is evident throughout where judgements are made about the significance of different reasons. A range of reasons are included and often developed to show stronger AO3. There is slightly less AO4 resulting in 7 marks rather than 8 marks.

7 marks

(h) Study Figure 1c and Figure 1d in the Resource Booklet.

Analyse reasons why water management in the 21st century can be challenging.

Refer to the resources in your answer.

(8)

Firstly, as seen in figure 1c, water withdrawals in the USA is far higher than Alaska and Hawaii, with most of the states ~~usually~~ withdrawing around 5001 to 10,000 gallons of water per day. This could be due to climate differences. As ~~the~~ alaska is generally colder and has lower temperatures, water is stored as glaciers naturally. However, as global warming is severe in the 21st century, natural water source is scarce as water is evaporated, creating water shortage. The problem of global warming is severe and difficult to manage, hence few solutions to this problem could be found.

Secondly, as seen in figure 1d, 49% (almost half) of USA's water use is on power. Due to the increase of technology and ~~their~~ the reliability on ~~electric~~ power, such as electrical power, large amounts of water is used to generate power, and without this power generating, it is hard to maintain our daily lives. Hence, it is hard to reduce water uses on power purposes.

Most importantly, humans need water to survive. ~~as~~ As global population continues to increase

rapidly in the 21st century, more people require water, hence global demand for water increases. In figure 1d, 12% of water use is used on public and domestic supply, contributing as one of the top consumers in water. In addition to that, as global living standards increase, people use water for leisure activities, such as indoor swimming, bathing, indoor waterpark etc. All of these involve large consumptions of water. **(Total for Question 1 = 25 marks)**

As shown in figure 1d, people in America use 99 gallons of water per day, 97.5 gallons more than the world's poorest, which means that these water uses were not necessary and used for leisure purposes.

All in all, the above problems are hard to manage and control, as one involves the world's climate, one involves the maintance of daily lives of the population and the other one a growing population. All of these require long-term governmeal policies or costly schemes to manage.

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There is clear analysis throughout this answer with language such as: 'firstly', 'secondly', 'most importantly', 'in addition', 'all in all' where this response makes judgements about the severity/complexity of the challenge being discussed. There is clear use of the resources to support arguments throughout and several different reasons are explained to provide the range required for Level 3.

8 marks

Question 2 (b)(ii)

In this question, candidates were required to state a type of weathering process. Candidates had a clear knowledge of different weathering processes with a high proportion of candidates gaining credit.

A very few candidates stated a type of erosion rather than weathering.

Question 2 (c)

In this question, candidates were required to explain one way human activity can threaten coastal ecosystems. Candidates were awarded for identifying a human threat and explaining the impact of this threat on the ecosystem. The majority of candidates were awarded the full two marks on this question.

(c) Explain **one** way human activity can threaten coastal ecosystems.

(2)

Human developpeat around coastal ecosystems may expose them to pollution/ invasive coastal management strategies or heavy tourism, all of whichdetrimental to the ecosystem.

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This response has a list of several human activities rather than one way plus development.

1 mark

(c) Explain **one** way human activity can threaten coastal ecosystems.

(2)

Littering is a great human-induced problem for the ecosystem. It

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Littering is a human-induced problem (1).

1 mark

(c) Explain **one** way human activity can threaten coastal ecosystems.

(2)

Construction near coastal ecosystems may result in the loss of the habitats of specific species.

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Construction (1) may result in loss of habitats (1).

2 marks

Question 2 (d)

This question required candidates to use Figure 2a, which showed details of coastal management strategies for a coastline in South West Spain, to explain two reasons why there may be conflict over the coastal management strategies chosen.

The credit for these type of 'explain' questions comes from correctly identifying a factor plausible from the information given in the resource (AO3) and then developing this to explain how this influences landforms (AO2). Candidates were not awarded for just lifting concordant / discordant from the resource.

Candidates on the whole were able to identify a factor which can create/change landforms shown in the figure. The better responses explained two clearly distinct factors. A few candidates only gave one factor – 'geology' – and described the difference between the concordant and discordant coastline in terms of doesn't erode/does erode, limiting the response to 2 marks as only one factor given.

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

Explain **two** factors that could influence landforms on this coastline.

(4)

1 r COASTAL FLOODING, THAT COULD GO THROUGH THE COASTLINE AND DESTROY THE HEADLAND.

2 RAIN THAT COULD WET THE ROCKS FALL AND ACCUMULATE THEM IN THE SEA.

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No factor relevant to information shown in Figure 2a.

0 marks

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

Explain **two** factors that could influence landforms on this coastline.

(4)

1 The type of rocks, soft rocks are easier to erode while hard rocks can be eroded easily.

2 The type of waves wether it is destructive or ~~evcord~~ constructive.

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Examiner Comments

The type of rocks (1) soft rocks are easier to erode (1) = 2 marks.

The type of waves whether it is destructive or constructive (1).

3 marks – 2+1

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

Explain **two** factors that could influence landforms on this coastline.

(4)

1 The discordant coastline results in the creation of headlands and bays as the softer rock is eroded quicker than the harder rock.

2 The direction of prevailing wind can influence the formation of depositional landforms. This is because the wind dictates the direction of waves and therefore the direction of transport of sediment.

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Examiner Comments

Discordant coastline results in headlands and bays (1) as the softer rock is eroded faster than the harder rock (1).

The direction of the prevailing wind influences formation of depositional landforms (1) because the wind dictates the direction of waves and therefore direction of transport of sediment (1).

4 marks

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

Explain **two** factors that could influence landforms on this coastline.

(4)

1 On the discordant coastline, the softer rock will be eroded quicker than the hard rock – this causes the soft layers to retrive inlcnd, leaving the hard rock layers in the forms of headlands

2 If long shore drift moves in a NE direction, material will be deposited in the bays due to the headlcnds blocking the movement of LSD. This forms natural beaches along the discordant coastline

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Examiner Comments

The softer rock will be eroded quicker than the hard rock (1) this causes the soft layers to retreat inland leaving hard rock layers to form headlands (1)

If longshore drift moves in a NE direction (1) material will be deposited in the bays forming natural beaches (1).

4 marks

Question 2 (e)

Candidates were required to explain the process of longshore drift. The majority of candidates achieved full marks clearly explaining the process in depth and providing a simple diagram to support their response.

(e) Explain the process of longshore drift.

(3)

the longshore drift process consist in the erosion of the shore and on the change of it shape and characteristics.

ResultsPlus
Examiner Comments

No valid points relating to the process of longshore drift.

0 marks

(e) Explain the process of longshore drift.

(3)

Longshore drift is when sediment is carried along a coastline and deposited when the energy of the water is not enough to ~~form~~ carry the sediment any more. Often longshore drift creates spits or bars.

ResultsPlus
Examiner Comments

Sediment is carried along a coastline (1).

The rest of the response does not explain the steps in the longshore drift process and therefore is not relevant.

1 mark

(e) Explain the process of longshore drift. to retreat.

(3)

Longshore drift is when sediment is moved parallel to the shore in the direction of the prevailing wind. It ~~the~~ can lead to the formation of spits, bars, and tombolos if the coastline changes direction.

ResultsPlus
Examiner Comments

Longshore drift is when sediment is moved parallel to the shore (1) in the direction of the prevailing wind (1).

No credit for giving examples of landform(s) created.

2 marks

(e) Explain the process of longshore drift.

(3)

the Process ~~of~~ ~~begin~~ begins with the winds (the Prevailing winds) moving in a direction and ~~Pick up~~ the waves moving in the same direction of the wind Pick up any material ~~and~~ with their swash and move it up the coast. this same material is transported down along the beach/coast toward the ~~Sea~~ sea by the wave backwash which moves down due to the force of gravity acting upon it. this se Process continues for a Period of time and is called the longshore drift.

ResultsPlus
Examiner Comments

The process begins with the wind (prevailing) moving in a direction and waves moving in the same direction (1) pick up any material with their swash and move it up the coast (1) this same material is transported down the beach in the backwash due to gravity (1).

3 marks

(e) Explain the process of longshore drift.

(3)

Prevailing winds push water onto shore at an angle. Backwash pulls the sediment at 90°C back. This zigzag motion continues down the coast depositing sediment.

ResultsPlus
Examiner Comments

Prevailing winds push water into shore at an angle (1) backwash pulls sediment at 90 degrees back (1) this zigzag motion continues down the coast depositing sediment (1).

3 marks

Question 2 (f)

The majority of candidates correctly identified the type of coastal management strategy.

Question 2 (g)

This question required candidates to explain one advantage and one disadvantage of soft engineering strategies. This could be generically for soft engineering as a whole or specifically to named types of soft engineering.

A significant proportion of candidates achieved full marks. Occasionally, responses lacked development of the advantage and disadvantage.

(g) Explain **one** advantage and **one** disadvantage of soft engineering strategies.

(4)

Advantage

Soft ~~engineeri~~ engineering, like beach replenishment looks natural to the coastal environment and it's relatively cheap.

Disadvantage

Soft engineering may be hard to maintain as ~~the~~ for example, beach replenishment needs to be constantly refilled/maintained

ResultsPlus
Examiner Comments

This response gives more than one advantage or disadvantage in each part, but does not offer any development for the second mark in either part.

2 marks – 1+1

(g) Explain **one** advantage and **one** disadvantage of soft engineering strategies.

(4)

Advantage

they take less resources and are cheap and can be enineered into place faster.

Disadvantage

The dis advantage is that they are not long lasting and it will cost alot to keep rebuilding them

ResultsPlus
Examiner Comments

The first part has more than one advantage stated, none are developed.

The second part offers a developed point: 'they are not long lasting (1) costing a lot to keep rebuilding' (1) = 2 marks.

3 marks – 1+2

(g) Explain **one** advantage and **one** disadvantage of soft engineering strategies.

(4)

Advantage

An advantage of soft engineering is that it protects the natural beauty of the coastline which may benefit tourists or locals and not alter the coastline's appearance dramatically.

Disadvantage

Soft engineering is not as effective as other hard engineering strategies such as sea walls in preventing erosion or coastal flooding, which can damage land and property and upset stakeholders such as locals and businesses.

ResultsPlus
Examiner Comments

Protects the natural beauty of the coastline (1) which may benefit tourists/locals (1).

Not as effective (1) as other hard engineering strategies (1).

4 marks

Question 2 (h)

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 candidates to apply their geographical understanding to the context shown in the resource.

In this instance candidates were required to study Figure 2c, a map showing coastal flood risk in New Orleans, and Figure 2d, information about coastal flood protection in New Orleans (between 2005 and 2021).

Candidates were able to access Figure 2d and use the information to describe changes made to flood prevention strategies and the influence this had on the impacts between the two tropical cyclones named in the resource. Fewer candidates made detailed use of Figure 2c. However, the better responses clearly linked the 'low risk' for New Orleans on the map to the improvements made to coastal flood prevention strategies, using evidence from Hurricane Ida's impacts to support their argument.

The command word 'analyse' needs to be addressed to achieve full marks. A proportion of candidates demonstrated making a simplistic judgement regarding which flood prevention strategy was most effective in their view.

(h) Study Figure 2c and Figure 2d in the Resource Booklet.

Analyse the effectiveness of the coastal flood prevention strategies shown.

Refer to the resources in your answer.

(8)

From "figure 2d" you can see that the coastal flood prevention was effective as in "Hurricane Katrina" we can see that "So flood walls" and "Levees" failed due to the maintenance and lack of investment however during "Hurricane Ida" in 2021 no "Levee or "flood wall" was broken and this is because the quality of the material was better so therefore withstood the Hurricane.

ResultsPlus
Examiner Comments

This response includes a basic AO4 comment and basic AO3 comment.

2 marks

(h) Study Figure 2c and Figure 2d in the Resource Booklet.

Analyse the effectiveness of the coastal flood prevention strategies shown.

Refer to the resources in your answer.

(8)

In New Orleans USA they have a coastal flood protection system. In 2018 the new flood walls were completed which will protect New orleans to a certain extent as they will ~~stop~~ prevent water from coming in to areas protecting people, homes and the environment. However there are reports that this protection may only last for a few more years because of rising sea levels and shrinking ~~levees~~ levees, although no flood wall was broken or flooded in 2021 during Hurricane Ida. This then shows ~~it had~~ the flood walls and levees had a great affect against the Hurricane compared to the ~~strategies~~ strategies in 2005 when Hurricane Katrina hit New orleans since 200,000 homes and businesses were destroyed. In conclusion the flood prevention strategies ~~in 2018~~ made in 2018 had great effectiveness on New orleans as there was no flooding between the walls and leavees and no breakage, however strategies and systems made to protect areas are very expensive and will cause issues in the ~~first~~ future if they were to fail. as this could happen due to the rising sea levels.

ResultsPlus
Examiner Comments

There is clear use of Figure 2d throughout the response with correct information selected to support points given regarding effectiveness of strategies to a fairly basic level.

There is some comparison drawn between the two hurricanes mentioned in Figure 2d, although an unbalanced argument as there is no use of Figure 2c.

4 marks

(h) Study Figure 2c and Figure 2d in the Resource Booklet.

Analyse the effectiveness of the coastal flood prevention strategies shown.

Refer to the resources in your answer.

(8)

In figure 2d it talks able 3 different stratagies they have put inplace sinse the hurrican katrina in 2005. flood walls ~~with~~ have been put in place which will be very effective for reducing flooding in cities like New Orleans city which is situated in a high risk area acording to figure 2c. The figure 2c shows lots of high risk in quite inland areas and especially round the south east coast this ~~coast~~ would be alot less ~~effects~~ at risk now a water pump statrons are build there as it says in figure 2d as the water that may flood onto the low land can get transported away and remove flood water geting trapped in low lying areas that ~~acordin~~ in figure 2c can be seen as high and medium risk. Flood gates nave also ~~be~~ enstalled to hold back water and rising sea levels from submerging the land. The coastal flood protection according to figure 2d has had US $14 billion of flood preventcon put in place to protect new orleans. The walls and gates and water pump Statrons have proved to be successful as non of them flooded or broke as it says in figure 2d

in a hurricane in 2021. This suggests that they will have reduced effect to humans living in those areas and less flooding but also in figure 2d it suggest that these protections may not be useful for ~~ever~~ much longer as sea levels are rising making them insufficent for there job.

(Total for Question 2 = 25 marks)

ResultsPlus
Examiner Comments

This response uses both figures and draws on relevant information to support its argument for effectiveness. There is a clearer explanation of why the new defences will be more effective than the ones in 2005 and linkage between Figure 2c and 2d.

5 marks

(h) Study Figure 2c and Figure 2d in the Resource Booklet.

Analyse the effectiveness of the coastal flood prevention strategies shown.

Refer to the resources in your answer.

(8)

The coastal flood prevention strategies seem to have been a success in New Orleans. This is because in 2021, after Hurricane Ida no flood wall or levee was broken or flooded, as stated ~~in~~ in figure 2d. This shows a clear improvement in flood defenses since 2005, as then over 50 were broken. However, even with the recent success, the USA's 14 billion dollar investement will be useless in a few years due to rising sea levels. This deveases the effectiveness as ~~then~~ soon they will have to be replaced.

The ~~a~~ effectiveness of the prevention strategies is limited due to the location of New Orleans. As seen is figure 2C New Orleans is in a 'High risk' area to be flooded. This therefore limiting how much prevention ~~as~~ can be done before it nothing can be. However, the completions of the Water pump stations in 2017, can benefit the reaction to a flood. Their is very little use in investing in pumps as they are more of

a reaction to a flood event.

In conclusion, there is an increase in effectiveness of the prevention strategies shown, and they have been proved to work after hurricane Ida.

(Total for Question 2 = 25 marks)

ResultsPlus
Examiner Comments

There is basic judgement stated at the beginning of response which is required for top Level 2. Provides comparison between the two hurricanes to support argument for flood prevention strategies. This response has a balance between 2c and 2d and a simple conclusion is provided. The depth of AO3 is more limited, keeping the answer in Level 2.

6 marks

(h) Study Figure 2c and Figure 2d in the Resource Booklet.

Analyse the effectiveness of the coastal flood prevention strategies shown.

Refer to the resources in your answer.

(8)

As shown in fig 2c, New Orleans is situated on a coastline with a high risk of flooding. It needs management strategies to protect it. The area behind New Orleans is at a low risk which is possibly due to implemented flood prevention strategies.

As shown in fig 2d, $14 billion USD of management strategies where used to protect New Orleans following the devastating Hurricane Katrina. Prior to the defences, 1,000 people died with 200,000 properties being destroyed and 800,000 were forced to leave due to poorly maintained and underfunded flood defences, showing that defences have an impact. As shown in fig 2d, flood walls, a flood gate, levees and water pump stations were built with the major investment. These prevented massive catastrophe from Hurricane Ida in 2021 as no levee or flood wall was broken or flooded. This shows that the management was effective in absorbing wave energy and floods. However fig 2d also states that reports claimed that the defences may only last a few more years due to rising sea levels and shrinking levees. This means even more money will have to be invested and maintenance costs will be very high.

Overall, the prevention strategies were greatly needed

after the devastating Hurricane Katrina and clearly prevented a repeat by preventing flooding during Hurricane Ida (although at a huge cost). The management will possibly have to be renewed however so in the long term they were less effective.

ResultsPlus
Examiner Comments

There is detailed use of resources throughout the answer to support arguments made with regards to effectiveness of flood prevention strategies. Some judgement language is used within the response (e.g. prevented massive catastrophe, however) with a clear link to future consequences to gain AO3 credit.

The depth of geographical understanding needs to be increased for full marks.

7 marks

(h) Study Figure 2c and Figure 2d in the Resource Booklet.

Analyse the effectiveness of the coastal flood prevention strategies shown.

Refer to the resources in your answer.

(8)

Figre 2d shows many effective flood prevention strategies we can see that have proven to work well against hurricane Idas, however all of these were newly put into place after Hurricane Katrina hit. That is why it tells us that 1000 people died, 200 000 houses and homes destroyed and 50 walls and levees broken due to the hurricane. This is due to Figure 2c where we can see that New orleans is a coastal city of South eastern America at a point where coastal flooding is categorised at high risk. We also know that it already has a low level above sea water which means less water is needed to flood it as well as the eustatic sea level rise due to climate change global warming will aid in the flooding process. The map also showing the main city being close to the coast means if only part of it is flooded it will have a larger effect on its denser population of inhabitance therefore very good prevention strategies will be needed. That is why from 2012 to 2018 flood walls, gate and 4 Pump stations have been put in place which will aid in stopping flooding occuring. Therefore this $14 billion investment was quite effective for the time being as it greatly lowers the risk of flooding however due to this eustatic sea level rise in the future these strategies may be made obsolete. Further if hurricanes repeats itself and money isn't invested in maintaing strategies shown in figure 2d they will become useless. They could also become more effective if they had warning systems and evacuation drills such as in Sendai Japan in order to mitigate the social impacts

that may occur if New Orleans is flooded again as it took many years to rebuild and all new infrastructure. We can see in the diagram of flood walls in figure 2d that all of the land surrounding is very flat making the area prone to flooding and sea walls can usually but as it looks as though it is on a salt marsh where high tide will enter

(Total for Question 2 = 25 marks)

Said marsh during this time less excess water is required to get past the flood walls and flood the area. These strategies may also just be effective to slow down flooding and allow people to evacuate as figure 2c shows how going further inland has low risk of flooding and so fewer people will be effected if this happens. Therefore I believe the Flood walls would be the most effective and then water pump stations as these only help once the flood has happened instead of only mitigating the

ResultsPlus
Examiner Comments

This response uses both resources well particularly using Figure 2c to explain the rationale for the strategies implemented in Figure 2d demonstrating a deeper understanding of the issue. There is use of 'analysis' language within the response (e.g. 'therefore', 'further') to increase depth of judgement as well as a final judgement about which strategy is deemed most effective overall.

8 marks

Question 3 (b)(ii)

In this question, candidates were required to define the term hot spot. It was clear from the range of answers that candidates found this question a challenge, often making reference to plate boundaries demonstrating uncertainty about this type of volcano.

Question 3 (c)

Candidates were required to explain one way people can prepare for earthquakes. A significant proportion of candidates achieved 2 marks, with the most common answer focusing on building design. However, a few candidates gave an answer focusing on either monitoring (e.g. using seismometers) or evacuation of people (after the event); neither of which are preparation strategies and therefore achieved zero marks.

(c) Explain **one** way people can prepare for earthquakes. the crust.

(2)

By evacuating to avoid the dangerous hazard, and ensure no injuries or deaths occur.

ResultsPlus
Examiner Comments

Evacuation of people is a response to an earthquake as there is often no or minimal warning provided.

0 marks

(c) Explain **one** way people can prepare for earthquakes.

(2)

People can use seismometers to detect earthquakes before they occur and then alert the population to give them enough warning to evacuate safer or get to safety.

ResultsPlus
Examiner Comments

This response gives a monitoring strategy which is carried out by scientists and is not a specific preparation response.

0 marks

(c) Explain **one** way people can prepare for earthquakes.

is there to rise between the gaps.

(2)

Educate themselves about procedures. Many individuals in vulnerable countries have survival packs with necessary equipment, such as tinned food, cash and a phone, allowing for a greater chance of survival if stranded or unable to seek rescue/supplies.

ResultsPlus
Examiner Comments

Survival packs with necessary equipment (1) increases chance of survival if stranded or unable to seek rescue (1).

2 marks

(c) Explain **one** way people can prepare for earthquakes.

(2)

They can have well designed buildings for example rubber padds in the ~~foundati~~ foundations or counter weights at the tops that can be ~~desi~~ designed to with stand earthquakes

ResultsPlus
Examiner Comments

Well designed buildings with rubber pads (1) in foundations to withstand earthquakes (1).

2 marks

Question 3 (d)

This question required candidates to use Figure 3a, which is a resource showing the Saffir-Simpson scale to show tropical cyclone damage, to suggest two reasons why tropical cyclones cause damage.

The credit for these type of 'explain' questions comes from correctly identifying a factor plausible from the information given in the resource (AO3) and then developing this to suggest why damage is caused (AO2).

Candidates on the whole coped well with the demands of this question, most often commenting on strength of wind / flooding / heavy rainfall as possible reasons. As the question asked for two reasons, candidates were required to suggest two different factors. On occasion, candidates stated two different impacts for the same initial reason, e.g. wind damaging buildings and wind blowing over trees. These responses were limited to 2 marks as only one initial reason was provided in the response.

(d) Study Figure 3a in the Resource Booklet.

Suggest **two** reasons why tropical cyclones can cause damage.

(4)

1 They damage houses

2 They damage tree and land and cause danger to human

ResultsPlus
Examiner Comments

No reason identified from Figure 3a.

0 marks

(d) Study Figure 3a in the Resource Booklet.

Suggest **two** reasons why tropical cyclones can cause damage.

(4)

1 Strong wind - high speed of which can cause catastrophic damage

2 large type of hazard - have long magnitude which effects more than one area

ResultsPlus
Examiner Comments

Strong wind (1); the development is too vague for credit.

The second point is not relevant to the question.

1 mark

(d) Study Figure 3a in the Resource Booklet.

Suggest **two** reasons why tropical cyclones can cause damage.

(4)

1 tropical cyclones ~~have~~ can have extremly high wind speeds which can be destructive to buildings and environments.

2 High wind speeds can cause distruption in oceans and can cause tsunamis.

ResultsPlus
Examiner Comments

Extremely high wind speeds (1) destroys buildings (1).

The second point lacks clarity as there is not a clear enough link to the idea of storm surge and strong wind is credited in the first reason.

2 marks – 2+0

(d) Study Figure 3a in the Resource Booklet.

Suggest **two** reasons why tropical cyclones can cause damage.

(4)

1 high windspeeds may cause significant damage to property.

2 tropical cyclones may pick up lighter objects and cause more significant damage even to larger and more stable/stronger structures.

ResultsPlus
Examiner Comments

High wind speeds (1) damage to buildings (1) = 2 marks

The second point is too vague and focused on high wind speeds rather than a second reason.

2 marks – 2+0

(d) Study Figure 3a in the Resource Booklet.

Suggest **two** reasons why tropical cyclones can cause damage.

(4)

1 Due to strong winds, they can damage buildings and essential services such as electricity, pipe lines and communication.

2 storm surges - when the cyclone increases the sea level and 'expands' the sea, it can cause costal flooding and damage escape routes along the coast that people use to evacuate from danger

ResultsPlus
Examiner Comments

Strong winds (1) damage buildings (1) = 2 marks

Storm surges (1) causes coastal flooding (1) = 2 marks

4 marks

(d) Study Figure 3a in the Resource Booklet.

Suggest **two** reasons why tropical cyclones can cause damage.

(4)

1 The wind is so strong and fast that it can damage buildings and rip apart anything in its way

2 The tropical cyclone causes flooding, which can flood infrastructure, causing great damage even killing people

ResultsPlus
Examiner Comments

Wind is strong (1) damage buildings (1) = 2 marks

Flooding (1) damages infrastructure (1) = 2 marks

4 marks

Question 3 (e)

Candidates were required to explain one reason why emergency aid can be important for responding to earthquake events.

Candidates had a clear understanding of the term emergency aid and most were able to gain at least 2 marks for identifying a suitable reason and offering a development. Fewer candidates were able to offer a further development of the initial reason, often giving a separate second reason resulting in 2 marks.

It would be useful to remind candidates of the need to fully develop one reason for these types of questions in the future.

(e) Explain **one** reason why emergency aid can be important for responding to earthquake events.

(3)

Emergency aid is important for earthquake events as the shock waves can cause building to collapse this leaves people homeless and vunerable so aid is needed to help them

ResultsPlus
Examiner Comments

This response gives detail about impacts of an earthquake rather than focusing on emergency aid.

0 marks

(e) Explain **one** reason why emergency aid can be important for responding to earthquake events.

(3)

early warning is message sent to people to warn them that an earthquake will happen this could help them to prepare for the earthquake or leaving the area and going to an area that has no risks from the earthquakes

ResultsPlus
Examiner Comments

This response focuses on evacuation rather than emergency aid, so not relevant to the question asked.

0 marks

(e) Explain **one** reason why emergency aid can be important for responding to earthquake events.

(3)

because the building colapes on people and people will be stuck under ruble and injured.

ResultsPlus
Examiner Comments

Buildings collapse and people will be struck under rubble (1).

1 mark

(e) Explain **one** reason why emergency aid can be important for responding to earthquake events.

(3)

People who are stuck or injured, emergency aid will be helpfull to them. Also they can provide the injured and victims of earthquake events food shelter and medication which save peoples life.

ResultsPlus
Examiner Comments

Emergency aid can provide injured with medication (1) which save people's lives (1).

2 marks

(e) Explain **one** reason why emergency aid can be important for responding to earthquake events.

(3)

Hurt or injured people ~~need~~ would need quick response. Earthquakes could cause houses to collapse and people to get stuck under them. These injured people need emergency aid as quick as possible in order to get out ~~of the~~ and be treated and ~~save lives~~ have their lives saved

ResultsPlus
Examiner Comments

As houses collapse and people get struck (1) hurt injured people need quick response in order to get out (1) and be treated and have their lives saved (1).

3 marks

(e) Explain **one** reason why emergency aid can be important for responding to earthquake events.

(3)

Emergency aid can reduce the number of deaths as more people can be treated quickly which can reduce the spread of diseases such as Cholera.

ResultsPlus
Examiner Comments

Reduce the number of deaths (1) as more people can be treated quickly (1) which can reduce the spread of diseases such as cholera (1).

3 marks

Question 3 (f)

Most candidates were able to identify the eye as the feature of the tropical cyclone shown in Figure 3b.

Question 3 (g)

In this question, candidates were required to explain two hazards associated with volcanic eruptions. Candidate responses to this question were strong. It is clear the majority of candidates understand a range of different volcanic hazards and the consequences of each.

(g) Explain **two** hazards associated with volcanic eruptions.

seismic

(4)

1 Flooding, it also happens when constructive or destructive plates are moving. When the volcano erupts, it causes pressure to the mantle which

2 Tornados/storms - fast winds and rain are caused by volcanos ~~because~~ when they erupt.

might cause flooding

ResultsPlus
Examiner Comments

Flooding needs to clearly be linked to a volcanic hazard for credit; this is too vague.

Tornados/storms are not relevant to volcanic hazards.

0 marks

(g) Explain **two** hazards associated with volcanic eruptions.

(4)

1 Pyroclastic flows - A hot flow of gases rocks and lava that can destroy anything in its path.

2 lava bombs shot out from the volcano, fly into ~~town and~~ nearby town and villages.

ResultsPlus
Examiner Comments

Pyroclastic flows (1) destroy anything in its path (1) = 2 marks

Lava bombs (1) – development is too vague for credit.

3 marks – 2+1

(g) Explain **two** hazards associated with volcanic eruptions.

(4)

1 Volcanic eruption can be sudden ~~of~~ ~~fast~~ and can cause earthquakes because they form when oceanic plate is put under continental.

2 Magma that turns to lava can burn people, houses, and biodiversity down.

ResultsPlus
Examiner Comments

Earthquakes (1)

Lava (1) burns people/houses/biodiversity down (1) = 2 marks

3 marks – 1 +2

(g) Explain **two** hazards associated with volcanic eruptions.

(4)

1 The lava flow, if people come near the lava flow, there are chance they can die as the lava is really hot and can melt the person's whole body

2 The pyroclastic flow as that is poisonous and if a ~~pelson~~ person, inhales it, the person can die.

ResultsPlus
Examiner Comments

Laval flow (1) if people get too close they could die as its hot (1) = 2 marks

Pyroclastic flow (1) is poisonous if inhaled (1) = 2 marks

4 marks

Question 3 (h)

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 candidates to apply their geographical understanding to the context shown in the resource.

In this instance, candidates were required to study Figure 3c, a map showing the distribution of people killed by seismic hazards between 2010-2020, and Figure 3d, a table of information on selected earthquake events between 2017-2021.

Candidates were able to access Figure 3d and use the information provided to suggest possible reasons why people live in areas at risk of seismic hazards. The use of Figure 3c was less frequent and less detailed. It would be beneficial to remind candidates to increase the balance in their response when more than one Figure is provided. The better responses made a clear judgement about the significance of a factor, for example level of development/wealth, on the reasons for a locations vulnerability.

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

(h) Study Figure 3c and Figure 3d in the Resource Booklet.

Analyse possible reasons why some countries are more vulnerable to the impact of earthquakes.

Refer to the resources in your answer.

(8)

On tectonic plate boundries

According to source 3D lower GDP means the recovery will be slower because the country is not wealthy enough to recover by itself and will likely need aid from other countries

Richer countries are less corrupt, like the USA.

In Figure 3C it ~~shows~~ shows that there are more fatalities ~~At~~ around tectonic plate boundries and mountain ranges, most of which are near or in LIC.

The worst according to 3C is around/near India the boarders and mountain ranges which are tectonic plate bondries - conversive ~~plate~~ boundries.

They could be at risk also because ~~~~ they are near hot spots or in them. Those are where there are no plate bondries

exist but hazards like earthquakes still happen.

ResultsPlus
Examiner Comments

There is basic use of both resources and simple development points listed at end of each paragraph to reach top Level 1.

3 marks

(8)

~~From~~ From the figure 3c, we can see that these events usually happen in west America, Southern Europe and South-west Asia. These areas are ~~pa~~ between plates and when ~~plats~~ plates are moving, volcanos erupt, there ~~a~~ might be earthquakes and floods. All these events are very dangerous for humans.

From 3d, we can see that US. as a developed country, it has a higher magnitude than Indonesia in an earthquake event in 2019, only 1 people dred while in Indonesia, this number is 105. This might be explained by number of doctors per 1000 people. In US, it is 2.9 while in Indonesia, it is only 0.4. It is same with Mexico the earthquake in Mexico killed 370 people. We could see why in GDP. It is 9287 dollars in Mexico while it is 65297 in USA, it is almost 6 times higher.

ResultsPlus
Examiner Comments

This response makes reference to both resources and outlines one reason linked to level of development of a country with a range of correct facts lifted from 3d to reach the bottom of Level 2.

4 marks

(h) Study Figure 3c and Figure 3d in the Resource Booklet.

Analyse possible reasons why some countries are more vulnerable to the impact of earthquakes.

Refer to the resources in your answer.

(8)

One reason why countries such as Indonesia which is a LIC is more vulnerable than a country like the USA which is a HIC, is because it has lower GDP per capita. This means there is less money to spend on warning systems and less money to help provide clean food, water and shelter after an event occurs. More money may lead to stronger infrastructure which could withstand a earthquake better.

Another reason is where the epicenter is located. If the epicenter is located in a populated area such as new Mexico a that will be a bigger impact because more people are at risk hence New Mexico has the biggest death toll of 30 people. Epicenter in California was in a remote region so the death toll was lower because there were less people around.

Countries are also more vulnerable if the education standard is low. Doctors are needed to treat those injured after a hazardous event which is why Indonesia is most at risk because only 0.4 of 1000

people are doctors, ~~so that~~ this is why they have the ~~in~~ highest amount of injuries at 3,368.

ResultsPlus
Examiner Comments

There are three clear reasons explained (development level, epicentre location, level of education) using evidence from Figure 3d to support argument throughout. Lacks the depth and judgement required for Level 3.

6 marks

(h) Study Figure 3c and Figure 3d in the Resource Booklet.

Analyse possible reasons why some countries are more vulnerable to the impact of earthquakes.

Refer to the resources in your answer.

(8)

Figure 3C shows us a map of the annual number of fatalities by seismic hazards. We can see that areas along the Europe Asia and Russia are most vulnerable to earthquakes, and places in South America as well, as they have an average annual no. of fatalities between <5 and >50. However, the countries situated between Europe Asia and Russia are most susceptible to earthquakes, as they seem to have a higher no. of fatalities (reaching 25-50 and >50), and is also quite clustered. This tells us that perhaps these countries are situated on a tectonic plate boundary that is quite sensitive to earthquakes, causing them to happen quite frequently. Moreover in figure 3d, we can see that the number of deaths in Mexico was highest with 370, followed by Indonesia with 105 and the US with 1 death. The magnitude for the Mexico earthquake was the highest/greatest (of 7.1), which suggest that it was the high magnitude that led to the most deaths out of the three earthquakes. Indonesia had a magnitude of 6.2 and US 6.4. Although the US had a slightly higher magnitude than Indonesia did, they still had a significantly lower number of deaths than Indonesia. This might be because of the country's level of development - As the US is an HIC, they will have more aid and better preparation for the earthquake beforehand. The GDP per capita for the US is $65297, which shows us that a lot of money could have

been spent for after the earthquake (aid, rebuilding, etc.) the doctor per 1,000 people at in also a major factor ~~death~~ which affects how quickly people can ~~help~~ get aid at. America has 2.9 doctor per 1,000 people, whereas Indonesia only has 0.4. this alone can play an immense difference in the no. of live saved or not saved right after an earthquake event.

ResultsPlus
Examiner Comments

This response works through both resources making logical connections between resource and reason for vulnerability. Range of different reasons provided, all supported by information from the resources.

There is some evidence of judgement/analysis within the response (e.g. 'however', 'moreover', 'although', 'major factor'), but a more thorough judgement is required for full marks.

7 marks

(h) Study Figure 3c and Figure 3d in the Resource Booklet.

Analyse possible reasons why some countries are more vulnerable to the impact of earthquakes.

Refer to the resources in your answer.

(8)

figure 3c shows how death toll varies globally and figure 3d shows there's a range of factors and impacts of earthquakes.

One reason some countries may suffer more from earthquakes is due to their physical geography and the nature of the earthquake. Mexico which had the most deaths at '370' also had the highest magnitude at '7.1'. The higher magnitude means more seismic energy was releasd and so the ground shaking was likely more violent and so more buildings collapses and so more people died. As seen in figure 3c Central America (including Mexico) and West coast of South America have an average of less than 5 people killed by seismic hazards annually. figure 3d also shows the epicentre was '10km from Mexico City', as a city population density is high and so exposure is high, increasing vulnerability. Another factor is level of development, figure 3d shows the earthquake in the US had only 1 death, 369 less than Mexico, 2017. Since the US is developed it has enough money to invest into education and mitigation with a GDP of $65,297 per capita. It was also in the desert with a low population meaning exposure was lower. ~~and~~ Indonesia is poorer than the US with GDP per capita of $4,450 so

it could not invest as much in education or to aseismic buildings, etc., increasing its vulnerability. The epicentre of the earthquake was also '70km from a town', increasing exposure and thus vulnerability.

Overall, some countries are more vulnerable to earthquakes if they're less developed, as seen in figure 3c where (see below) lots of South-East Asia, mainly

(Total for Question 3 = 25 marks)

developing/emerging countries have 5-50 average deaths per year due to seismic hazards. It also depends on the nature of the earthquake, though overall, richer countries tend to be less vulnerable as they have reliable emergency aid, education and investment into safe infrastructure.

TOTAL FOR SECTION A = 50 MARKS

ResultsPlus
Examiner Comments

There is clear discussion of a range of reasons why some places are more vulnerable including: magnitude, level of development, and location of epicentre.

Evidence from the resources is selected to support each argument made and on occasion, the complexity and interrelationships between reasons is made clear. There is a concluding statement at the end of the response with several strands of analysis included to reach full marks.

8 marks

Question 4 (a)

Please note that the comments made on Question 4 also apply to Question 5 and Question 6 as the questions are in parallel and the resources are very similar. Section B contained questions on both familiar and unfamiliar contexts this series.

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

For this question, candidates needed to describe one way they managed risk. This meant identifying the risk and stating the mitigation strategy used to reduce the risk. The majority of candidates were able to achieve 2 marks on this question as they had a clear grasp of risk and mitigation.

You have carried out a geographical enquiry as part of your work on river environments.

Title of your geographical enquiry

What is the most prominant environmental ~~physical~~ cause of river flooding?

(a) Describe **one** way you managed a risk that you identified during your enquiry.

(2)

I identified physical factors getting involved and interfearing so I piched an environment with scarce human and physical activity to effect my result.

ResultsPlus
Examiner Comments

No risk identified.

0 marks

You have carried out a geographical enquiry as part of your work on river environments.

Title of your geographical enquiry

effecting of farming near rivers

(a) Describe **one** way you managed a risk that you identified during your enquiry.

(2)

To curb the problem of eutrophication I used precise amounts of fertiliser to make sure non was lost through a leeching

ResultsPlus
Examiner Comments

Not a plausible mitigation suggested.

0 marks

You have carried out a geographical enquiry as part of your work on river environments.

Title of your geographical enquiry

(a) Describe **one** way you managed a risk that you identified during your enquiry.

(2)

is it safe. Appropiate clothing.

ResultsPlus
Examiner Comments

Appropriate clothing (1) is a creditable mitigation strategy, but no risk is identified for a second mark.

1 mark

You have carried out a geographical enquiry as part of your work on river environments.

Title of your geographical enquiry

To investigate how the characteristics of the river Class change downstream.

(a) Describe **one** way you managed a risk that you identified during your enquiry.

(2)

One risk during our enquiry in the river was slips, trips and falls. This was managed by wearing suitable footwear and watching our footing.

ResultsPlus
Examiner Comments

Slips/trips/falls in river (1) managed by wearing suitable clothing (1).

2 marks

You have carried out a geographical enquiry as part of your work on river environments.

Title of your geographical enquiry

To investigate the change in characteristics of the River Ogmore as we move downstream.

(a) Describe **one** way you managed a risk that you identified during your enquiry. (2)

As we need to go into the river for measurement, and there may be some waterborne diseases in the river, so we wear wellies to avoid directly contact with the water, to avoid get infected by the diseases.

ResultsPlus
Examiner Comments

Waterborne diseases (1) wear wellies/avoid direct contact with water (1).

2 marks

Question 4 (b)

Please note that the comments made on Question 4 also apply to Question 5 and Question 6 as the questions are in parallel and the resources are very similar. Section B contained questions on both familiar and unfamiliar contexts this series.

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

This question required candidates to explain one way they decided their sites for data collection. These 3-mark 'develop one way' questions are often the most challenging for candidates to achieve full marks. Often responses gained credit for an initial point and a development of this, but less responses went on to fully develop to gain the third mark.

(b) Explain **one** way you decided on your sites for data collection.

(3)

I decided to look at the river and its contents because it was the place that would face a rapid increase in algae before a tremendous decrease in bio diversity

ResultsPlus
Examiner Comments

This response is too vague for credit as there is no clear idea why the sites were selected.

0 marks

(b) Explain **one** way you decided on your sites for data collection.

(3)

On all three courses of the river, a site was picked at random.

ResultsPlus
Examiner Comments

The idea of wanting to sample a site in upper, middle, lower course is enough for a basic reason for site selection.

1 mark

(b) Explain **one** way you decided on your sites for data collection.

(3)

~~Systematic collection~~ we picked ~~total~~ sites every certain distance apart, made sure every site was safe for data collection, and was easy to access in case of emergencies.

ResultsPlus
Examiner Comments

This response has a list of several different reasons; none of which are developed.

1 mark

we chose sites based of accessibility This was because we needed sites accessible with large enough roads for our bus as well as because we needed to be quick as ours had one day

ResultsPlus Examiner Comments

Chose sites based on accessibility (1) because we needed sites accessible with large enough roads for our bus (1) = 2 marks

The end of the response is a separate point.

2 marks

(b) Explain **one** way you decided on your sites for data collection.

(3)

River Clywedog is very near our school, so we were able to visit all the sites in one day. By visiting all the sites in one day we eliminated some of the margin for error that would have occured ~~so~~ should we have done the measurements on ~~different~~ different days, such as a large storm.

ResultsPlus Examiner Comments

River is very near our school (1) so we were able to visit all the sites in one day (1) which eliminated some of the margin for error (of having to visit on a different day) (1).

3 marks

Question 4 (c)

Please note that the comments made on Question 4 also apply to Question 5 and Question 6 as the questions are in parallel and the resources are very similar. Section B contained questions on both familiar and unfamiliar contexts this series.

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

Candidates were required to describe two types of data collection method used for their enquiry. Where candidates understood the 'data collection method', full marks were achieved. There were instances where the focus of the question was misinterpreted and responses focused on sampling strategy, data presentation technique or data analysis technique resulting in zero marks being awarded.

Candidates need a clearer understanding of all the steps in the geographical enquiry process to avoid misinterpreting examination questions.

(c) Describe **two** types of data collection method you used during your enquiry.

(4)

1 Strategised sampling is divided into groups, unlike random sampling, and ties to prevent biased results.

2 Random sampling

ResultsPlus
Examiner Comments

No description of data collection method is provided.

0 marks

(c) Describe **two** types of data collection method you used during your enquiry.

(4)

1 I collected quantitave data on the water quality of each site by measuring the pH, turbidity and nitrogen content of each site.

ResultsPlus
Examiner Comments

Measured pH, turbidity and nitrogen content (1); no development describing how any data collection method was carried out.

1 mark

(c) Describe **two** types of data collection method you used during your enquiry.

(4)

1 Recorded data on a table, such as slope angle, speed of discharge... To compare the results. Used quantative data.

2 Also used qualitative data, such as pictures and annotated diagrams to not forget the informations, and use later on.

ResultsPlus
Examiner Comments

Slope angle / discharge (1).

Annotated diagrams (1).

Neither data collection method is developed, so no second marks are awarded.

2 marks – 1+1

(c) Describe **two** types of data collection method you used during your enquiry.

(4)

1 We used a stopwatch to determine the speed of the river. We used an inflatable ball which was released onto the stream, the time it took for it to travel 10 metres from one point to the other was used to calculate river velocity. (this method was systematic)

2 Another method was random sampling of the sediment across the river. This helped eliminate bias and delivered representative results of the variation of sediment shapes and sizes on that course of the river

ResultsPlus
Examiner Comments

Used inflatable ball which was released and time it took to travel 10m (1) to calculate river velocity (1) = 2 marks.

Sample sediment size/shape across the river (1).

No credit for development as it does not describe how the method was carried out, but evaluates the method.

3 marks – 2+1

(c) Describe **two** types of data collection method you used during your enquiry.

(4)

1 I measured the velocity of the river using a stopwatch and float. I recorded the amount of time it took the float to travel a set distance, then divided the distance by the time.

2 I measured the depth of the river using a metre stick. I measured it at regular intervals in a cross-section of the river.

ResultsPlus
Examiner Comments

Velocity (1) using stopwatch and float recorded time it took to travel a set distance (1) = 2 marks.

Measured depth (1) using a metre stick measured at regular intervals in a cross-section (1) = 2 marks.

4 marks

Question 4 (d)

Please note that the comments made on Question 4 also apply to Question 5 and Question 6 as the questions are in parallel and the resources are very similar. Section B contained questions on both familiar and unfamiliar contexts this series.

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

Candidates need a clearer understanding of all the steps in the geographical enquiry process to avoid misinterpreting examination questions.

This question required candidates to explain one technique used to analyse their data and most candidates provided a response focused on a data presentation technique which often resulted in zero marks awarded. Occasionally, these responses achieved one or two marks as 'compare' was credited as a very simplistic analysis technique.

The better responses explained a specific data analysis technique such as: central tendencies, interquartiles, interquartile range, percentages and, although not listed in the specification, some candidates provided responses explaining Spearman's rank or standard deviation.

(d) Explain **one** technique you used to analyse your data.

(3)

Checking PH of the water samples. I took each sample and used different indicators to check the levels of acidity, and how dirty the water really is

ResultsPlus
Examiner Comments

This response is not relevant to the question asked as this response focuses on a data collection method.

0 marks

(d) Explain **one** technique you used to analyse your data.

(3)

I used a graph made by Excel as these are the most accurate graph's possible due to being made by a computer.

ResultsPlus
Examiner Comments

No credit awarded as this response focuses on data presentation rather than data analysis so not relevant content.

0 marks

(d) Explain **one** technique you used to analyse your data.

(3)

I put my data onto graphs To see [redacted] in a visual manner The data That I had collected. This allows me To analyse my data more closely because it allows me To compare.

ResultsPlus
Examiner Comments

Comparison was awarded as a very simplistic data analysis technique as candidates found this question particularly challenging.

1 mark

(d) Explain **one** technique you used to analyse your data.

(3)

we looked for any anomalous results and excluded them then compared our data with local sources to see if they are similar creating reliability

ResultsPlus
Examiner Comments

Compared data (1) to see similarities creating reliability (1).

2 marks

(d) Explain **one** technique you used to analyse your data.

(3)

Calculating measures of central tendencies. This allowed us to see where anomalies might have occured and remove them from our data and also allowed for us to more conveniently recognise trends in our data that could help answer our ~~our~~ own enquiry question

ResultsPlus
Examiner Comments

Calculate measures of central tendencies (1) this allowed us to remove anomalies (1) and recognise trends (1).

3 marks

Question 4 (e)

Please note that the comments made on Question 4 also apply to Question 5 and Question 6 as the questions are in parallel and the resources are very similar. Section B contained questions on both familiar and unfamiliar contexts this series.

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

Candidates need a clearer understanding of all the steps in the geographical enquiry process to avoid misinterpreting examination questions.

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 geographical enquiry stage presented (AO3). Therefore, they require the candidates to apply their geographical understanding to the context shown in the resource.

In this instance, candidates were required to study Figure 4/5/6a, a scatter graph presenting two variables from the students data collection, and Figure 4/5/6b, a bar graph presenting variables from the students data collection.

The focus of this question required an evaluation of the data presentation techniques used by the student. Unfortunately, this question demonstrated the candidates' limitation in understanding each stage of the geographical enquiry process as many responses were solely focused on evaluating data collection methods resulting in minimal marks awarded. This meant few responses reached high level 2 or level 3.

Where candidates did understand the term ‘data presentation technique’ these responses often reached at least mid-level 2, there was a common misconception with regards to presenting the data as a land graph as a more appropriate presentation technique which is incorrect for the data shown.

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.

Evaluate the effectiveness of the data presentation techniques used by the student.

(8)

Firstly looking at figure 4a the students data almost had a constant pattern where the less river discharge the higher the average bedload size (in MM) apart from the anomoly at around 1.25 river discharge where the test might of gone wrong for that part of the test

Looking at figure 4B we can see that the pattern is the discharge is always slightly more than the velocity apart from site 7 which is the anomoly the velocity is considerably higher than the discharge From site 1 to site 6 we can see both the velocity and discharge decreasing the higher the site is.

By performing the data like this we are able to study the pattern of the graph and see any mistakes along the way

ResultsPlus
Examiner Comments

This response describes what both graph resources show to gain AO4 credit with a basic statement at the end of the response stating that the resources allow the pattern and mistakes to be seen to gain an AO3 mark.

3 marks

(e) Study Figure 4a and Figure 4b in the Resource Booklet. They show some information about data presentation from a student's enquiry.

> The aim of the student's enquiry was to investigate changes in river characteristics. The student made field sketches of the data collection sites, and collected data on river velocity, river discharge and bedload size.

Evaluate the effectiveness of the data presentation techniques used by the student.

(8)

In ~~Figure~~ figure 4a, it shows a scatter graph. ~~and this~~ This is effective for showing me the trend in results, and eliminates any anomalies. Putting average bed load size on x axis is effective as it shows how it clearly has a trend in decreasing as the discharge decreases.

Figure 4b, shows results represented as bar graph. This effectively allows me to see the different results he got at the different sites he recorded at. It effectively portrays that, except sites 6 and 7, discharge levels are higher than velocity levels. Also allows me to effectively make predictions about where the sites were on the course of the river, e.g. velocity increases as it goes from the upper course to middle course, so I can

assume, from his effective bar graph representation, that he is travelling up the course of the river, with site 1 having fastest velocity and then the general trend going down.

ResultsPlus
Examiner Comments

The response correctly identifies both types of graphs shown in the resources with basic evaluation of the pro and con of each of the presentation techniques to reach bottom of Level 2.

4 marks

Evaluate the effectiveness of the data presentation techniques used by the student.

(8)

Figure 4a shows a scatter graph of discharge against bedload size. This data presentation method is effective as we can clearly see the trend and the anomaly at 1·25 cumecs where the bedload size is smaller than that of higher discharges, disrupting the trend. However, there are many values not covered, but drawing a line of best fit would be assuming the data and not be very accurate or reliable. Although, for the bedload size, the values used were on average which makes them more reliable. Figure 4b shows a bar chart of velocity and discharge. Bar charts are very visually effective as you can clearly see the difference in each value and compare the length which makes it easy to interpret. It also makes the anomaly at site 7 stand out so we can easily discard it. However, the usage of st numbered sites doesn't tell you anything about them, and so drawing conclusions based off

the graph would be difficult since we don't know if some of the intervals between sites is 5km, when others are 20km. The question tells us that the student also drew field sketches of the data collection sites. This could be very helpful in determining why there may be anomalies in the graphs shown in figures 4a and 4b because we can see the environmental factors that may have affected the results. However, it would have been more effective to take photos since they can be more accurate and be true to life.

(Total for Question 4 = 20 marks)

ResultsPlus
Examiner Comments

There is clear judgement at the start stating the scatter graph is effective with evidence from the resource to support judgement and clear connections to possible improvements for the presentation technique.

There is clear understanding of the strengths and limitations of the data presentation techniques used with plausible improvements offered. In the second half of the answer, there are basic examples of analysis with language such as: 'however' and 'although' to reach top Level 2.

6 marks

The aim of the student's enquiry was to investigate changes in river characteristics. The student made field sketches of the data collection sites, and collected data on river velocity, river discharge and bedload size.

Evaluate the effectiveness of the data presentation techniques used by the student.

(8)

Figure 4a shows a scatter graph representing average bedload with increased river discharge. This is confusing since it does not show a change with distance downstream but instead compares bedload size with river discharge. 2 separate scattergraphs showing bedload against distance and discharge against distance would answer the student's question more effectively.

Figure 4a shows a negative correlation between bedload size and river discharge. This is what is expected from the Bradshaw model, since bedload decreases with distance downstream and discharge increases. This negative correlation could be presented more effectively by using Spearmans Rank: we used this in our enquiry to show a negative correlation (-0.97) of bedload size compared to distance downstream. There is one anomaly in the graph, where one bedload size is much smaller than expected. It is difficult to know the source of this anomaly since the points are not labelled. Perhaps linking this to

a field sketch could give an explanation for this anomaly.

Figure 4b shows a bar chart, showing the average ~~si~~ velocity and discharge at each site. The x and y axis are the wrong way round: putting the dependent variable, size, on the y axis would be clearer. The 'size' also has no units on key: these numbers on the x-axis mean nothing, and so this graph is unreadable. **(Total for Question 4 = 20 marks)**

It shows contrasts in relative size, but how can velocity and discharge be measured on one axis?

Finally, figure 4b does not indicate which sites are ~~close~~ the furthest or the closest downstream. These sites could be in any order. However, if site 1 is the furthest upstream, the graph shows a decrease in the 'size' of velocity and discharge at each site.

To answer the student's enquiry question more effectively, ~~these~~ this data should be split into 4 graphs, and the anomaly at site 7 should be explained (figure 4b). A cross-sectional graph showing width and depth at each site would show the changes in river characteristics more effectively. The student should also show more characteristics in their results, such as velocity and gradient.

ResultsPlus
Examiner Comments

There is detailed and balanced argument throughout. This response works through both resources explaining strengths, limitations and possible improvements. There is evidence of judgement at the end of the answer where an overall consideration is given to suggest how the student could better meet their enquiry question to move into Level 3.

7 marks

(e) Study Figure 4a and Figure 4b in the Resource Booklet. They show some information about data presentation from a student's enquiry.

no photo

> The aim of the student's enquiry was to investigate changes in river characteristics. The student made field sketches of the data collection sites, and collected data on river velocity, river discharge and bedload size.

Evaluate the effectiveness of the data presentation techniques used by the student.

(8)

The changes in a rivers characteristics can be seen through the Bradshawl model which states that as we go down a river velocity, depth and width increase and friction and bedload size decrease.

The students in this investigation measured only 3 changes in the river characteristics: bedload, discharge and velocity. Their results would be more completed if they additionally explored width and depth.

Figure 4a effectively demonstrates the relationship between bedload size and river discharge since the more discharge (more water in the river at a set amount of time) the smaller and smoother the rocks will become. This is effectively shown in 4a however there is an anamoulous point that shouldve been recalculated or assessed for why it ~~could~~ couldve occured.

Figure 4b demonstrates the relationship of velocity and discharge as river moves at different sites. This graph is reliable due to the large number of

sites assessed. The x-axis is labelled as just 'size' which is vague, doesn't explain how it was measured or ~~the~~ what it was measured in, meters, cm, cm^2, etc. The graph effectively demonstrates at the start, from site 1-6 that as the river flows its discharge and velocity get ~~less together at a similar rate. This~~ smaller as the site progress to higher numbers. This would make sense if we assume that the

(Total for Question 4 = 20 marks)

site 1 is lower course and as it goes up it gets higher, however specifications are needed to strengthen results. This would make sense since as we go down the course of the river it speeds up and there is more water. The graph effectively demonstrates this and is well used. However ~~sites~~ data of sites 10-7 are all very ~~def~~ messy and seem incorrect following no pattern and numerous anomalies. ~~This~~ ~~this shows that perhaps the data would be better on a table where~~. The data would be presented more effectively if it had more annotations, explanations and pictures and titles on the graphs as numerous confusions arise as the graph is. ~~It is~~ 4a is much more effective than 4b.

ResultsPlus
Examiner Comments

This response has clear judgement from the start suggesting the student needed to present additional information if they were to meet their aim. There is further analysis language in places with terms like 'however', including an overall evaluative sentence at the end of the response.

This candidate also works through both resources stating strengths, limitations and possible improvements using specific evidence from Figure 4a and 4b.

This response has more depth and judgement to reach full marks.

8 marks

Paper Summary

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

- When answering the 8-mark longer response questions, candidates need to be clear on the demands of the command word 'analyse'. This requires candidates 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.
- Candidates need to 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 Level 1 response.
- Candidates who just lift text directly from a resource will not gain credit.
- In questions where candidates 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. For example, a 4-mark, 'explain one reason why…' question requires greater depth than a 4-mark, 'explain two reasons for…' question.
- Candidates need to ensure they complete the correct fieldwork question. There were a number of candidates answering questions based on a coasts enquiry in both the river and hazard enquiry questions. This limited responses as marks could only be awarded for generic ideas plausible for the enquiry context being answered.
- Candidates need to be confident in explaining different stages in the geographical enquiry process, not just fieldwork methods.
- Candidates need to be aware of the difference between sampling strategies and data collection methods.
- Candidates need to be aware of the difference between data presentation techniques and data analysis techniques.
- Candidates need to be confident in evaluating different presentation techniques.
- Some candidates do not follow the instructions on the front of the exam paper and attempt to answer all questions which often results in the candidate running out of time. It would be useful to spend time with candidates, using the SAMs materials, to ensure they 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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