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IGCSE Geography 4GE1 01

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Introduction

This was the first assessment of the new specification for International GCSE (9-1) Geography, Paper 1 – Phyiscal Geography component and it was pleasing to see a good standard of responses from candidates.

This paper consists of two 25 mark questions and one 20 mark question. The paper has a total of 70 marks. The exam includes multiple-choice questions, short open, open response, calculations and 8-mark extended writing questions. The exam command words which are used in this paper are defined on page 47 of the specification. Each of the questions is mapped to one or more of the Assessment Objectives (AOs).

The approach to individual items is considered in this report, including examples of good practice related to the 4-mark open response and 8-mark extended writing questions. These questions provided the greatest range of responses from candidates, with the best answers addressing the command word directly, whilst providing the necessary level of description, explanation and/or exemplification.

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.

The new International GCSE (9-1) Geography specification has been designed for all levels of ability, rather than being differentiated into higher and foundation tiers. In this new qualification, there is greater emphasis on application and interpretation (AO3), as well as the introduction of new command words (e.g. 'assess' and 'evaluate') which appears to have proven challenging for some candidates. There also appears to have been some time management issues with some candidates not managing to complete all the questions.

Question 1 (b) (ii)

This item required candidates to state one method of river transportation; overall this item was answered very well.

In this question the candidate is required to identify one process in which material is transported by a river.

(ii) State **one** process of river transportation.

(1)

Saltation

ResultsPlus
Examiner Comments

In this response the candidate has correctly answered the question for 1 mark.

ResultsPlus
Examiner Tip

For these low tariff questions candidates need to ensure that they have a clear understanding of key words and what they relate too.

Question 1 (b) (iii)

This item required candidates to explain one way water is stored in the hydrological cycle. Generally candidates were able to obtain a mark for identifying a store, but often didn't get the second mark as the development either wasn't present or wasn't detailed enough. Many candidates referred to clouds or atmosphere with fewer candidates identifying groundwater as a store. The most frequent incorrect responses referred to the water cycle being a closed system so water is stored globally, or they discussed transfers instead of stores.

(iii) Explain **one** way water is stored in the hydrological cycle.

(2)

One water store is The sea. As 95%.
of the world's water is stored in the sea
as most flows end up in the sea

ResultsPlus
Examiner Comments

Here the candidate has successfully obtained 2 marks as they have identified a way in which water is stored (AO1) and further developed the answer for the additional mark (AO2).

ResultsPlus
Examiner Tip

For these type of questions candidates need to develop skills where they fully develop their answers, in some cases cadidates stated just one word or a simple idea, resulting in them only gaining one mark.

This is a common example of where the candidate has mixed the idea of stores and transfers leading to limited success on this question.

(iii) Explain **one** way water is stored in the hydrological cycle.

(2)

Water is stored in ~~cloud~~ clouds which later turns to precipctation.

(iii) Explain **one** way water is stored in the hydrological cycle.

(2)

condensation
~~Evaporation~~ - water is evaported into air.
the Air then condenses back into water

Question 1 (c)

This item required candidates to use the fig 1a resource which identified a number of ways that people manage water supply.Usually answered well by candidates recognising water management methods, and although basic would often provide the development needed to affect water supply – usually related to be able to store it for later use when supplies were lower. As expected, some candidates struggled with the A03 element of this question. In some cases candidates didn't make use of the resource at all but chose instead to come up with their own ideas, which whilst credit worthy in some cases prevented candidates from accessing the full mark range.

This is an example of a good response where the candidate has accessed all 4 marks available.

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

Suggest **two** ways people manage water supply.

(4)

1 The use of Dams means that people are able to regulate and manage water supply. Dams seperate water into a reservoir and people are then able to regulate how much water goes through the dam.

2 Another way people manage waters supply is by storing it in water tanks. The waters is then able to be used when needed and not run risk of flowing away or evaporationg.

ResultsPlus Examiner Comments

In this example the candidate has recognisedthe importance of identifying a factor from the resource and developing a simple idea, i.e. a statement of how the feature identified can be used to manage water (AO2) but then goes on to talk about the idea of regulation (AO3) of water for when it is needed.

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

Suggest **two** ways people manage water supply.

(4)

1. They manage water supply through evaporation and Precitation. As they get water from the rivers.

2. The water isn't as clean but is still able to drink.

Question 1 (d)

For this item candidates were asked to explain one way in which vegetation affects river discharge. Often candidates recognised the link between vegetation and discharge with interception being acknowledged as a key influence. There were some good answers here that used geographical terminology such as interception and lag time with a significant number of students gaining 3 marks.

In this question candidates are required to focus on one idea and develop it in detail to access the 3 marks available.

(d) Explain **one** way vegetation can affect river discharge.

(3)

Vegetation stops water from reaching the river channel so fast because it intercepts it with its leaves and this means it takes longer to reach the ground. Therefore it keeps river discharge steady. steadier will lower peak flows.

ResultsPlus
Examiner Comments

This candidate has reached the maximum available marks as they have identified the fact that the vegetation has an impact on river discharge and they go on to develop a thorough explanation about how the vegetation affects the time for water to reach the river and the subsequent impact on peak flow.

ResultsPlus
Examiner Tip

Candidates should be aware that points should be developed to gain access to all marks available.

(d) Explain **one** way vegetation can affect river discharge.

(3)

Vegetation can decrease river charge discharge because the vegetation uses some of the water.

ResultsPlus
Examiner Comments

In this example the candidate scored 1 mark for stating a simple idea. Had the candidate developed the response further they would have gained 2 marks as they don't really explain anything.

Question 1 (e)

The majority of candidates were able to identify the waterfall as the river landform successfully.

(e) Study Figure 1b in the Resource Booklet.

Identify the river landform.

(1)

.... *waterfall* ....

Examiner Comments

The candidate has correctly identified the landform for 1 mark.

Examiner Tip

Candidates should look at the feature identified inside the box in this type of question and concentrate on the appropriate identification.

Question 1 (f)

This item required candidates to explain the formation of a river meander. Generally, the majority of candidates were able to score some marks on this item. Candidates who scored 3 or 4 marks tended to use more specific geographical terminology and were able to identify a sequence of events. In some cases candidates didn't access as many marks because they became confused over erosion and deposition on the inner and outer bends of the meander. Some candidates supported their responses with diagrams. In a few instances, candidates scored no marks as they described the formation of a different landform.

(f) Explain the formation of a river meander.

(4)

The meander is formed at lower land. The high speed of water flow erode one side of the river bank which make the side is deeper called river cliff. Bend the river, The other side of river bank get less erosion the low speed flow dep doesn't have enough energy, so the deposite on the other side of river bank, called slm off. The river become bender and bender then Meander form.

ResultsPlus
Examiner Comments

In this example the candidate has provided a good response to this question. They have identified several key features of river meander formation and although the process isn't complete they are able to achieve 3 out of the four marks.

ResultsPlus
Examiner Tip

Candidates should be reminded that it helps to learn the process of river feature formation as stages in a sequence. In this way as long as candidates can recall some of the steps they are likely to gain some marks.

(f) Explain the formation of a river meander.

(4)

A meander is when the water in a river takes a different route to the one that is expected.

ResultsPlus
Examiner Comments

In this example the candidate has failed to make any relevant points and the response is too vague.

ResultsPlus
Examiner Tip

It is important for candidates to gain a basic understanding of simple points - for example in this question an idea of erosion on the outside bend and deposition on the inside bend would result in the candidate gaining some credit.

Question 1 (g)

In this 8-mark extended writing question, the majority of candidates attempted some form of response. Often quite general statements were made which meant that a number of candidates were not able to access level 2. Where candidates accessed level 2 they worked in a more systematic way but tended to focus on just one rather than both of the resources. Where candidates did access level 3 they managed to link both resources together but in addition used case study material to support their ideas.

In this response the candidate has accessed all of the available marks. The response whilst not perfect does demonstrate the candidate's ability and understanding of the key elements of this response.

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

Analyse the reasons for variations in water quality.

(8)

- One reason for variations in water quality is due to education. Poorly educated people will pollute water sources more throwing rubbish and feaces in the water. This 'domestic sewage' is a driving factor for low water quality which can have serious impacts on health and well being. This lack of education and increase in pollution usually occurs in LIC's hence why figure 1D Shows that Over 20% of people use untreated water in countries in Africa. e.g Egypt On the other hand people that are educated, usually in HIC's, do not use untreated water. In the UK there is less then 1% of people using untreated drinking water due to a good education System. Furthermore, Governmental influence

also plays a huge part in water quality. Countries with a lot of govermental influence on water quality e.g Canada have less then 1% of people using untreated water as the goverment can fund water treatment programmes. This water treatment e.g. 'Chlorination' is a driving factor towards high water quality and good impacts on health and well being. A lack of govermental influence as seen in countries in Africa leads to a high number of people using untreated water (>20%). – Additionally the amount of industrial action taking place in a country leads to a difference in water quality. A large amount of industrial action can lead to 'industrial waste' which decreases the water quality leading to harmful health impacts. Moreover, pesticides from agriculture go into the water due to surface run off in feilds decreasing water quality putting more strain on the goverment and leading to an increase in healthy impacts. Largely LIC's have the most people using untreated water due to lack of goverment funding + education.

(Total for Question 1 = 25 marks)

A key tip for this type of question is that candidates should always make use of all the resources available rather than focussing on one element. In this way they are able to produce more balanced answers.

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

Analyse the reasons for variations in water quality.

(8)

Pollution lowers water quality. This is because it pollutes the water and can persist in the environment for a long time. Over exploytation, for example in North China, lowers water quality because it makes the water ~~have more salty~~ have more salts because its more concentrate.

Agricultural run off for example in the form of fertilisers lowers water quality because it ~~a~~ causes eutropication.

Industrial effluent lowers water quality because it releases toxic substances such as Mecury cadmium and lead into the water and this builds up over time.

~~because~~ Water treatments on the other hand help to make water safe for drinking. These include: ~~are~~ aeration, filtration and disifection as shown in figure 1c.

Variations in water quality exist in different countries because of the water treatment avaliable. In HIC's there is lots of treatment avaliable and in LIC's there isn't alot in general.

~~The~~ Amount of pollution also impacts water quality and in LIC's such as Bangladesh for many water treatment is un-avaliable and they therefore dump sewage directly onto water bodies.

In this example the candidate scores 4 marks. The candidate has developed some relevant ideas but unfortunately has made insufficient use of either of the resources to enable them to develop their ideas fully. There is some basic understanding which is why this response was lifted out of level 1.

Analyse the reasons for variations in water quality.

(8)

High

Water quality is vital for being able to sustain life, be it Human or other. Water is also incredibly important for economic reasons such as the cooling down of machinery or use as hydraulics. Because of this water quality is very important, however, the quality of water varies dramatically for different reasons. As shown in figure 1c, One reason for variations in water quality is the huge affect pollution sources have. Pollution sources (especially in LIC's where it is harder

for clean up to be payed for) effect water quality hugely. Domestic sewage leads to pathogens and deadly bacteria being accumulated in the water and making creatures (people included) sick. Industrial waste such as oil spills and car factory fumes leads to areas of stagnant tar and oil, this creates biohazards and kills many animals which will then further decrease water quality as they decompose. Agriculture, pesticides and fertilizers again all lead to waters quality being diminished. The use of water treatment (chlorination, aeration, sedimentation filtration and disinfection all help improve water quality and make it safe. In figure 1d we can see how lower income countries suchas areas in Africa have much lower water quality than a high income country suchas England, this is

(Total for Question 1 = 25 marks)

because water treatment is very expensive and LICs cannot afford to treat water nor clean up after pollution sources.

Question 2 (b) (ii)

This item required candidates to state one method of mass movement at the coast. This was not answered as the mirror question 1bii. Candidates who did score on this item tended to identify slumping and landslides.

In this question the candidate is required to identify one type of mass movement affecting coastal landscapes.

(ii) State **one** type of mass movement that affects coastal landscapes.

(1)

landslides

ResultsPlus
Examiner Comments

The candidate gains full credit in this example as per the suggested responses on the mark scheme.

Question 2 (b) (iii)

This item required candidates to explain one type of mechanical weathering that occurs at the coast. This item was relatively well answered with most candidates opting to explain freeze-thaw action. Where candidates didn't score any marks it was because they had confused weathering with erosion or had written about biological or chemical weathering.

Here the candidate has successfully obtained 2 marks as they have identified a method of mechanical weathering (AO1) and further developed the answer for the additional mark (AO2).

(iii) Explain **one** type of mechanical weathering that occurs at the coast.

(2)

freeze-thaw weathering is when water enters the cracks in rocks. When the water freezes, it expands causing the crack to widen. This can cause rocks to break away.

ResultsPlus
Examiner Comments

This is a good response demonstrating the candidate's high level of understanding.

ResultsPlus
Examiner Tip
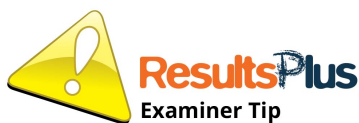
For these types of question candidates need to develop skills where they fully develop their answers, in some cases candidates stated just one word or a simple idea, resulting in them only gaining one mark.

(iii) Explain **one** type of mechanical weathering that occurs at the coast.

(2)

a type of chemical weathering is acid rain. This erodes the coast at a faster rate and causes destruction. it results in the breaking down of rocks on the earth's surface.

Question 2 (c)

This item required candidates to use the fig 2a which had identified ways in which changes in sea level had created coastal landforms. This item was answered either very well with candidates accessing full marks or very badly. Where candidates did score full marks they were able to identify the landform caused by the change in sea level and then develop the response further to suggest how it had been formed.

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

Suggest **two** ways changes in sea level have created coastal landforms.

(4)

1 When there is a^relative change in sea level where the sea level decreases, this can cause emergent coastlines such as relic cliff and raised beached e.g. Isle of Arran, Scotland.

2 When there is a relative decrease in the sea level, it can reveal a wave-cut notch which was caused by marine erosion ~~and is the broken pieces of~~ when the ~~sea~~ waves from the higher sea level were strong.

ResultsPlus
Examiner Comments

In this example the candidate has recognised the importance of identifying a factor from the resource and developing a simple idea, i.e. a statement of how sea level changes can create a landform (AO2) but the continues to give further detail on the landform and how it develops further (AO3).

ResultsPlus
Examiner Tip
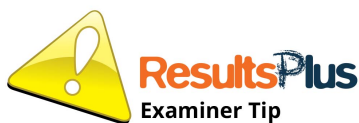
Candidates must always attempt to develop ideas fully to gain access to all 4 marks.

Suggest **two** ways changes in sea level have created coastal landforms.

(4)

1 flooding - by the increase in sealevel
   coastal landforms are ~~gone~~ raised because the
   the coast has been flooded. The sea structure
   would be raised.

2 fault joints being eroded by sea. The
   water errodes away the beach

Question 2 (d)

For this item candidates were asked to explain one physical factor that influences the distribution of mangrove ecosystems. Many candidates were able to identify a simple factor such as light, temperature or water depth but failed to develop their responses in enough depth. This resulted in few candidates gaining access to all 3 marks. Some candidates talked about human factors influencing distribution. Where candidates did score 3 marks responses were well developed and showed a good understanding.

In this question candidates are required to focus on one idea and develop it in detail to access the 3 marks available.

(d) Explain **one** physical factor that influences the distribution of mangrove ecosystems.

(3)

Mangrove ecosystems need a temperature of approximately 26° C to grow properly. They need lots of warmth, also from sunlight to photosynthesise and grow. If the waters are too cold, they will not be able to grow. An example of a mangrove ecosystem is in Sunderbans in Bangladesh were where it is hot.

ResultsPlus
Examiner Comments

In this example the candidate scores full marks as they explain how one factor affects the distribution of mangrove swamps. The candidate develops this response successfully by explaining how extremes of temperature affect the growth of mangroves.

ResultsPlus
Examiner Tip

Candidates should be aware that one point should be developed to gain access to all marks available.

(d) Explain **one** physical factor that influences the distribution of mangrove ecosystems.

(3)

One physical factor is the temperature; mangroves can cope with great heat and choking mud and so are able to grow in hot areas, eg around the equator where they are found.

Question 2 (e)

The majority of candidates were able to identify the arch as the coastal landform successfully.

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

Identify the coastal landform at X.

(1)

arch

ResultsPlus
Examiner Comments

The candidate scores 1 mark here for correct identification of the landform.

ResultsPlus
Examiner Tip

Candidates should look at the feature identified inside the box in this type of question and concentrate on the appropriate identification.

Question 2 (f)

This item required candidates to explain the formation of headland. Generally, the majority of candidates were able to score some marks on this item. Candidates who scored 3 or 4 marks tended to use more specific geographical terminology and were able to identify a sequence of events. In some cases candidates didn't access as many marks because they became confused between headland development with that of caves, arches and stacks. Some candidates supported their responses with diagrams.

In this question, candidates are asked to explain the formation of a headland this can be approached in several ways, either by specifically following a formation process which is linked or by identifying a number of individual points which contribute to the formation of the headland.

(f) Explain the formation of a headland.

(4)

Sometimes a coastline can be discordant such as the Purbeck coast in Dorset. This is when the different layers of rock run ~~parralled~~ perpendicular to the direction of the coastline. Headlands are made from competant rock such as granite or limestone as they are not easily eroded. The softer, incompetant layers of rock on either side such as boulder clay are eroded faster, leaving the headland jutting out to sea.

(f) Explain the formation of a headland.

(4)

When longshore drift ~~picks~~ picks up sediment from the sea and drops it along the coastline / headland.

Question 2 (g)

In this 8-mark extended writing question, the majority of candidates attempted some form of response. Often quite general statements were made which meant that a number of candidates were not able to access level 2. Where candidates access to level 2 they worked in a more systematic way but tended to focus on just one rather than both of the resources. Where candidates did access level three they managed to link both resources together but in addition used case study material to support their ideas. Candidates seemed to particularly struggle with the analysis element of the question.

In this response the candidate has accessed all of the available marks. The response whilst not perfect does demonstrate the candidate's ability and understanding of the key elements of this response.

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

Analyse the reasons for the choice of different soft engineering strategies shown.

(8)

In photo 1, cliff regrading is used because although it is high maintenance and high cost, it slows down the rate of erosion since the cliff is continually being reinforced when more material is added, this is a very good choice of soft engineering since although as it slows down the rate of erosion, the settlement behind has a reduced risk of erosion and more time to plan what to do when inevitably the cliff collapses and the settlement falls into the sea. In photo 2, Beach replenishment is used, this is a very good choice of soft

engineering since although it is also expensive and high maintenance, due to long there ain't a spit forms and as a marsh has behind the spit, this increases biodiversity along the coast and this is good since not only does it reduce the rate of erosion but beach replenishment allows provides a habitat for more animals for more animals maybe even boosting tourism." In Photo 3, the development of and extension of natural sand bars is used to reduce the rate of erosion. This is good since it firstly reduces the wave energy thus the waves have less strength for erosion and it does not look ugly. The only problem is that it is high maintenance since deposition moves the sand in the wave current. Finally, in Photo 4, managed retreat is used. It is good since there is just farmland in the area which is realistically not valuable land (it is not as valuable as a whole settlement). managed retreat also allows new habitats to form and develope for animals thus increasing biodiversity and it looks natural.

(Total for Question 2 = 25 marks)

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

Analyse the reasons for the choice of different soft engineering strategies shown.

(8)

- Cost is a main reason as you have to evaluate whether it is effective enough to spend a lot of money on. Some soft engineering strategies are more expensive than others e.g a cliff regarding is much more expensive than managed retreat.

- maintenance is another reason as you need to evalute how much time and work you have to put in to build it and ensure it stays in good condition and quality. some soft engineering

strategies are tetbe are higher maintenance than others e.g Beach replenishment has much higher maintenance needed than managed retreat does.

• another reason is the location of the soft engineering strategy, as it the location will be an important factor of what strategie will be used.

• how the strategies effectiveness will also be be a main reason for the choice of different soft engineering strategies as you want to ensure that you are choosing the most effective one for the job e.g if you needed to protect the cliffs from erosion cliff regarding would be the most effective strategie.

• it's appearence will also be a factor e.g managed retreat offers a good strategie without involving any unattractive equipment as it

(Total for Question 2 = 25 marks)

lets the environment be natural and do what it wants.

Question 3 (b) (i)

Most candidates were able to score a mark on this item Richter and Mercalli scales were the most popular options.

In this question the candidate is required to state one measure of earthquake intensity.

(b) (i) State **one** measure of earthquake intensity.

(1)

Richter Scale

ResultsPlus
Examiner Comments

In this response the candidate has correctly answered the question for 1 mark.

ResultsPlus
Examiner Tip

Some candidates struggled with the idea of intensity measurement.

Question 3 (b) (ii)

Most candidates were able to score a mark on this item as per the mark scheme.

In this question the candidate is required to identify one characteristic of a volcanic eruption.

(ii) State **one** characteristic of a volcanic eruption.

(1)

hot ash cloud

ResultsPlus
Examiner Comments

In this response the candidate has correctly answered the question for 1 mark.

ResultsPlus
Examiner Tip

For this type of low tariff questions candidates need to ensure that they have a clear understanding of key characteristics of hazardous environments.

Question 3 (b) (iii)

In this item candidates were asked to identify one cause of an earthquake event. Typically tectonic plate movement was identified with candidates gaining a second mark with development around the release of pressure that has built up. Where candidates didn't score two marks it was because they identified plate movement but then didn't go on to develop the answer fully.

Here the candidate has successfully obtained 2 marks as they have identified a cause of an earthquake event (AO1) and further developed the answer for the additional mark (AO2).

(iii) Explain **one** cause of an earthquake event.

(2)

A conservative plate boundary is when two plates move against each other horizontally causing the Earth to judder. A conservative plate boundary can form faults such as the San Andreas Fault in LA, USA.

ResultsPlus
Examiner Comments

This is a good response demonstrating the candidates high level of understanding.

ResultsPlus
Examiner Tip

For these type of questions, candidates need to develop skills where they fully develop their answers, in some cases candidates stated just one word or a simple idea, resulting in them only gaining one mark.

(iii) Explain **one** cause of an earthquake event.

(2)

When two plates collide when passing each other which disrupts the activity in the mantle below

ResultsPlus
Examiner Comments

In this example the candidate scores 1 mark for identifying a simple cause of the earthquake, however the response is underdeveloped so no other mark is awarded.

Question 3 (c)

This item required candidates to use fig 3a to identify the cause and direction of tropical cyclones. The first part of the question was answered better than the second. Usually candidates were able to get a developed point around warm sea temperatures but found the part around direction difficult. Where marks were awarded for this part it was usually around the prevailing wind. Candidates also struggled to explain the significance of the Coriolis force.

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

Suggest a factor that influences the cause and another factor that influences the direction of tropical cyclones.

(4)

Cause:

sea temperatures of >27°C which can warm the surrounding air, forming heavy cumulonimbus clouds.

Direction: Coriolis

The coriolis effect and position compared to the equator as the equator has no coriolis affect resulting in no cyclones, but areas around it have coriolis affect which means cyclones can form.

ResultsPlus Examiner Comments

In this example the candidate has recognised the importance of identifying a factor from the resource and developing a simple idea, eg the candidate has identified temperature as a cause (AO2) but the continues to give further detail on the level of temperature required and how it helps form tropical cyclones. (AO3). This response was enough to access all 4 marks with 2 developed points.

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

Suggest a factor that influences the cause and another factor that influences the direction of tropical cyclones.

(4)

Cause: ~~High~~

High sea temperatures above 27°c

Direction:

Generally heads north-west.

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Examiner Comments

In this example the candidate only scores 1 mark as as they have only identified one factor from the resource. The point around cause is not developed enough to access both marks.

The comment around direction is not credit worthy.

Question 3 (d)

For this item candidates were asked to explain how earthquakes can form tsunamis. Many of the candidate responses focused on the idea that earthquakes act as a trigger for a tsunami but often didn't develop the answer in enough depth to access full marks. In some of the better responses, candidates did identify the idea of shock waves and waves getting larger over distance.

(d) Explain **one** way earthquakes can form tsunamis.

(3)

> The earthquakes under the water, caused by movement of tectonic plates under sea, can cause massive tidal waves called tsunamis as the energy and shock waves generated from the earthquake, passes through the ocean creating large waves

ResultsPlus
Examiner Comments

This is a good response from the candidate, they have identified the link between plate movement under the sea and have gone on to further develop the answer and explain how this results in tsunami development.

ResultsPlus
Examiner Tip

Where candidates communicated tsunami development as a series of stages they were able to access more marks.

(d) Explain **one** way earthquakes can form tsunamis.

(3)

When the tsunami is affecting an area, it can affect the plates in the earth so the plates become unaligned, meaning an earthquake can be caused.

ResultsPlus
Examiner Comments

In this example the response from the candidate is confused and as a result the candidate doesn't score any marks.

Question 3 (e)

Generally, this item was answered very well with candidates being able to draw ideas successfully from the resource.

Question 3 (f)

For this item candidates were asked to explain why some areas are more vulnerable to than others to the impact of natural hazards. Candidates showed a good understanding of the reasons why vulnerability varied. Usually there was enough material for more than four marks. Most candidates provided a series of developed points around education and preparedness and economic development affecting the ability to provide protection and effective response. Often examples were given although they weren't requested.

(f) Explain why some countries are more vulnerable than others to the impacts of natural hazards.

(4)

developing countries such as Hati are more vunerable than developed countries such as New zealand as they have better defense mechanisms, as well as stonger and more restant buildings. This is because they can afford to spend money on protecting their country. As well as this, they may have better quality and MORE hospitals and other aiding services in order to recover better from hazards.

ResultsPlus
Examiner Comments

In this example the candidate has produced a good response through the development of 2 separate points. The first point makes reference to the idea that in developing countries there isnt enough money to develop mechanisms to reduce the impact of hazards. The second point goes on to explore the idea that emergency services may not be of such high quality in developing countries and as a result the ability to cope with natural hazards is reduced.

(f) Explain why some countries are more vulnerable than others to the impacts of natural hazards.

(4)

Some might have b be have a sea for example near their home or some is bigger than others. Also the the way the land is made or formed out.

Question 3 (g)

In this 8-mark extended writing question, the majority of candidates attempted some form of response. Often quite general statements were made which meant that a number of candidates were not able to access level 2. Where candidates accessed level 2 they worked in a more systematic way but tended to focus on just one rather than both of the resources. Where candidates did access level 3 they managed to link both resources together but in addition used case study material to support their ideas. This item was not answered as well as the equivalent items in questions 1 and 2.

In this response the candidate has accessed all of the available marks. The response whilst not perfect does demonstrate the candidate's ability and understanding of the key elements of this response.

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

Analyse the use of hazard, vulnerability and risk mapping in reducing the impact of earthquakes.

(8)

Earthquake impacts occur on a local, national and international scale and can be categorised as social, economic and physical, as well as long and short term. Mapping can mitigate these impacts to a large extent, however technology is more widely available in MEDCs than LEDCs.

Figure 3c shows the stages in hazard mapping, which can be used in the risk assessment and appraisal stage of earthquake management stages 2 and 3. 2 enables the identification of areas at the highest risk, thus adequate preparation which reduces can be undertaken in terms of construction of isolated seismic structures and education of local residents, which mitigates the short term physical impact of and subsequently also the long-term economic impact the earthquake by reducing infrastructure collapse and the social impact

by reducing deaths. Japan uses Probabilistic Seismic Hazard Maps (PSHM) and Scenario Earthquake Shaking Maps (SESM) to identify these areas and land use zoning is carried out to prevent further development in those areas, as described in Figure 3c in terms of Longterm management. However, this technology is expensive and historic records can only predict earthquakes to a certain extent, thus hazard mapping is generally inaccessible to LEDCs making them more vulnerable.

Figure 3d shows the 3 different maps used in a South American country to identify high hazard, vulnerability and risk areas. This identification can be reused after a tectonic event to prioritise the locations most threatened and therefore provide sufficient short term emergency relief to reduce social impacts. For Japan used such maps in the 2010 earthquake, which enabled the Health Ministry and Japanese Red Crescent Society to dispatch aid to the most impacted areas; this was successful to a large extent as there is little reason areas of higher population density or at highest risk of aftershock (as described in stage 3 hazard mapping) received largest amount of aid and relief.

In conclusion, hazard, vulnerability and risk mapping is important in earthquake management to a large extent, however they are more widely available in MEDCs which have higher funding.

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

Analyse the use of hazard, vulnerability and risk mapping in reducing the impact of earthquakes.

(8)

Identifying where there is the most hazards, vulnerabilty and risk mapping helps to reduce the impact of earth quakes because you are able to target areas that need the most help. In south america the vulnerability map had the most concering factors because there was the most areas of vunrabilty this is bad because it shows that this area has no way of defending itself as it is vunrable. Making these maps then means you are able to target the area that needs the most help. In the risk map there was some areas of high risk this means that there are areas of risk in which you are able to go to the area and put stragies inplace to reduce the impact.

Question 4 (a) (ii)

Q 4aii, 5aii and 6aii were the same across each option. Generally candidates had a good understanding of the limitations of different sampling methods. Most candidates were able to access the mark.

(a) (i) Identify the type of sampling method used.

(1)

☒	A	systematic
☒	B	random
☒	C	stratified
☒	D	opportunistic

(ii) State **one** disadvantage of using one of the sampling methods in the question above, a(i).

(1)

Sampling method .... random ....

your results wouldn't be accurate because it wouldn't be a fair test.

ResultsPlus
Examiner Comments

In this example, the candidate scores 1 mark as they have identified a simple disadvantage of random sampling.

ResultsPlus
Examiner Tip

Candidates should be aware that low tariff questions sometimes only require a simple response.

Question 4 (a) (iii)

Q 4aiii, 5aiii and 6aiii were the same across each option.

This item was answered quite well with many candidates gaining 2 marks. Where candidates scored only 1 mark it was due to them not writing the final answer to one decimal place or because they had not shown the relevant working out as detailed in the question.

Study Figure 4a in the Resource Booklet. It shows sample data on velocity from one site on a river. A cork float was used to measure the time taken to travel between two points, A and B.

(iii) Calculate the mean time taken for the cork float to travel between points A and B.

Give your answer to **one** decimal place.

You must show all your workings in the space below.

(2)

$$\frac{21.1 + 16 + 14.1 + 15 + 35 = 101.2}{5} = \frac{101.2}{5} = 20.24s$$
$$= 20.2 s$$

20.2 seconds

ResultsPlus
Examiner Comments

In this example, the candidate has gained credit for both marks available as they have demonstrated their working out and given the answer to one decimal place. This is exactly what was required for this question.

(iii) Calculate the mean time taken for the cork float to travel between points A and B.

Give your answer to **one** decimal place.

You must show all your workings in the space below.

(2)

71.1
16.0
14.1
15.0
+ 55.0
_____
101.2

$$\frac{101.2}{5} = 20.24$$

20.24 seconds

ResultsPlus
Examiner Comments

In this example, although the candidate has carried out the correct calculation they have only scored 1 mark because the final answer wasn't rounded to one decimal place.

ResultsPlus
Examiner Tip

For calculate questions read the instructions carefully to ensure you meet the requirements of the question.

Question 4 (a) (iv)

Q 4aiv, 5aiv and 6aiv were the same across each option.

This item required candidates to complete the bar chart. In the majority of cases candidates were able to plot both bars successfully.

(iv) Using the data in Figure 4a (in the Resource Booklet), complete Figure 4b below for measurements 1 and 4.
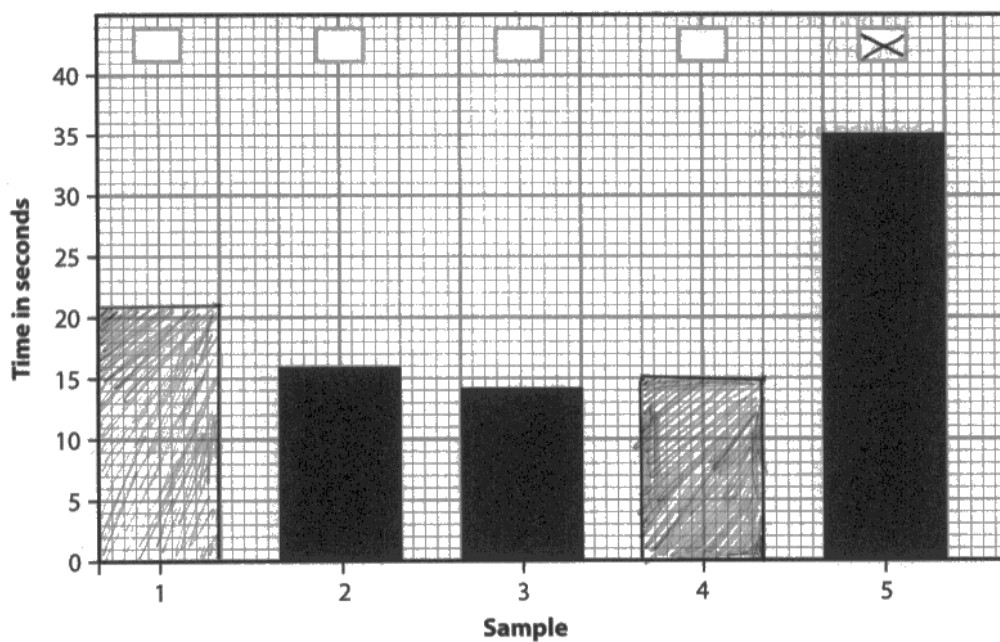
(2)

Figure 4b

Measurement times taken for float to travel between points A and B at one site

ResultsPlus
Examiner Comments

This a good example of a candidate who has scored both available marks through taking care to draw the bars correctly.

ResultsPlus
Examiner Tip

Always use a ruler as it will help with accuracy.

Question 4 (a) (v)

The majority of candidates were able to identify the anomaly and gain credit.

Question 4 (a) (vi)

Q 4avi, 5avi and 6avi were the same across each option.

Q4avi. For this question candidates were asked to suggest a reason for the anomalous result i.e. the fact that the cork float took far longer to travel between A and B for sample 5. Most candidates scored 1 mark here through identifying that something could have stopped the cork flowing down the river, however in some cases they did not gain access to the second mark because the candidate did not outline what effect the cork getting caught would have on the time taken to get to point B. Other ideas included human error in timing or the distance measured between point A and B.

Q5avi. Candidates in some cases tended to describe the anomaly rather than give a reason for it. Many candidates accessed 1 mark for a simple idea such as rock fall.

Q6avi. Few candidates attempted this question but those that did followed the same pattern either just describing the anomoly gaining no credit or by stating a simple idea such as human error.

(vi) Suggest **one** explanation for this anomaly.

(2)

The student might have miss timed the cork. eg they might have ~~thought~~ forgotten where the second hand started on their whatch.

Question 4 (b)

Q4b, 5b and 6b assessed the same skill.

A relatively well answered question with the majority of students being able to describe another primary method of data collection. Many candidates wrote about the use of questionnaires. Those that did identify another primary method where normally able to develop the answer fully to gain either 2 or 3 marks. In Q4b many candidates described collecting width and depth data for the river, whilst in Q5b beach gradient was common. Q6b had the least well developed response from candidates with elements of weather data collection being the most common but under developed answer.

In this example, the candidate is looking at the rivers fieldwork question.

(b) To extend the river study, students were asked to use **one** other primary data method.

Explain **one** other primary data method they might have used.

(3)

They could have measured how deep the river was. They would have to They could measure how wide the river was. They would have too use a tape tape measure to measure the width of the stream

ResultsPlus
Examiner Comments

This is a typical example where the candidate scores 2 marks. In this instance, they have identified a primary data collection method they could use and started to explain what they would need to do. However, the answer is not developed in enough detail to gain access to the final mark.

ResultsPlus
Examiner Tip

For questions of this type, candidates should be encouraged to think of data collection methods as a process in this way they should be able to recall the stages they would go through more easily and access more of the marks available.

Question 4 (c)

For this item candidates were asked to evaluate the success of their data analysis methods in answering their geographical enquiry question. Candidates experienced some difficulty with this question. The majority of candidates failed to get out of level 1 due to a poor understanding of what was meant by the term data analysis. In the level 1 responses candidates were awarded marks for some basic ideas around using graphs to support analysis. Many candidates failed to score as they were focussed on describing data collection methods. Very few responses reached level 3 which was disappointing but those that did showed a good understanding with a high level of development.

You have studied river environments for your geographical enquiry.

(c) Evaluate how successful your chosen data analysis methods were in answering your geographical enquiry question.

(8)

Enquiry question

Assessing the changes [downstream] in characteristics of the River Medway

One of our data analysis methods was the use of a graph of the cross-sectional area of the river at each location where we recorded width, depth and velocity. As we recorded 5 measurements of the depth across the width of the river, using systematic sampling as they had equal intervals, this allowed us to draw accurate graphs. This method of data presentation and analysis was particularly effective as it allowed us to easily compare the changes in width and depth of the river at each point, as well as to see the shape of the river bed, which was helpful in spotting anomalies as we were able to identify them very clearly.

On the other hand, this data analysis method was not very successful in answering our question as it was very time consuming and we used too small a scale on our graphs to grasp the full extent of our data.

Another way that we analysed our data was through comparative bar graphs These were particularly successfull as they were not too time consuming and allowed us to easily compare our data from each site. We used this method to compare the average velocity of the river at each site and I believe it was very successfull as it allowed us to see the clear progression of the data we collected and it allowed us to easily question our hypothesis and spot anomalies.

Another way that we analysed our data was through line graphs of the river width This was very successful as it was easy to analyse the changes in the width of the river and also to predict possible values for the width of the river in the areas we were unable to measure. Overall, I think our analysis methods were very successful, as we were able to clearly compare the data from each site and follow the progression of the width, depth, discharge and velocity of the river as we progressed downstream.

(c) Evaluate how successful your chosen data analysis methods were in answering your geographical enquiry question.

(8)

Enquiry question

That river shape will change with distance down stream?

I collected data to show how wide and deep the river was. I then plotted my findings on a graph as a cross-section. This was an effective method to use as it clearly showed the shape of each part of the river that I took a cross-section for. However I only had figures for the depth every 10cm meaning that the profiles that & I had to view were not shaped very like the river. I also calculated the average depth and width for each part of the rivers course on the cross-section that I took so this gave me a good idea of how the shape changed overall but I took my measurements in a time of drought meaning that this method may not have been very valid as the drought may have effected different parts of the river course differently.

In this example, the candidate scores 4 marks a low level 2 response. The candidate is quite descriptive in their response with a very subtle evaluative comment with regard to effectiveness.

Question 5 (a) (ii)

Usually scored a mark related to points around bias.

Question 5 (a) (iii)

Often correct, although quite a few did not follow the instruction to give answers to 1 decimal point.

Question 5 (a) (iv)

Usually the graphs were correct. Occasionally not attempted.

Question 5 (b)

Where candidates were able to successfully identify a method of data collection, there would usually be clear development for full marks. Sometimes data collection methods were not appropriate for coasts. Beach profiles were the most common responses that got full marks.

Question 5 (c)

As with other part c questions candidates often didn't score well here as they focused their answer around data collection methods, rather than analysis. Candidates often scored marks through inferred analysis via data presentation methods. It's a shame as often very good geographical fieldwork knowledge was present, but it didn't relate to analysis which meant that many of these answers scored very low marks. Few noted the evaluate command word, and were often descriptive of what they had done.

Question 6 (b)

A relatively well answered question with the majority of students being able to describe another primary method of data collection.

Many candidates scored 1 mark but their ability to expand on their response was weak.

Question 6 (c)

A poorly answered question with the vast majority of pupils not understanding the analysis part and focussing on data collection only.

Paper Summary

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

• Ensure that candidates are familiar with the new command words used in this specification, for example, the difference in demands of 'analyse' and 'evaluate'.

• Candidates should also spend time reviewing the process of geographical enquiry to ensure that the stages are understood, this will help candidates prepare for the level response question in section B.

• Alternatively, 'evaluate' requires candidates to measure the value or success of something and ultimately, provide a substantiated judgement/conclusion.

• In questions where there is reference to a resource, it is important to ensure that evidence from the resource is used to answer the question.

• 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.

• There will always be a few questions that require candidates to perform a calculation. Therefore, it is essential that candidates have a calculator with them. It is also important to read the question carefully. For example, if the question states, 'answer to one decimal place', this must be done to access full marks.

• In the new specification, there is a greater emphasis on AO3 (application of knowledge and understanding), rather than merely recalling facts and figures. Therefore, it is important that candidates can apply place-specific information from their case studies to unfamiliar contexts, or when asked to refer to a named country. The absence of this is likely to limit attainment of higher marks.

• Use the Sample Assessment Materials (SAMs) and specimen papers to help familiarise candidates with the structure of the paper; this will hopefully avoid situations where the rubric has not been followed.

Grade Boundaries

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

http://www.edexcel.com/iwantto/Pages/grade-boundaries.aspx