



Examiners' Report

June 2022

International GCSE Geography 4GE1 01

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June 2022

Publications Code 4GE1_01_2206_ER

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Introduction

The first sitting of this specification for Pearson Edexcel International GCSE Geography took place in 2019. Due to the pandemic, there were only small entries for this exam in 2020 and 2021. 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 12-mark question from Section B. This year the total mark for this paper was 62, as there were only questions focused on unfamiliar fieldwork contexts in Section B resulting in less marks awarded in the fieldwork section. However, the length of time for the exam remained the same.

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)

In this question, candidates are required to identify one transfer within the hydrological cycle.

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

(ii) State **one** transfer in the hydrological cycle.

(1)

ice caps



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This response gives a store in the hydrological cycle rather than a transfer.

0 marks

(ii) State **one** transfer in the hydrological cycle.

(1)

Evaporation



ResultsPlus
Examiner Comments

This response shows a correct transfer in the hydrological cycle.

1 mark

Question 1 (c)

This question required candidates to explain how solution (corrosion) erodes the river channel.

Some candidates mixed up solution for abrasion or attrition and so were awarded zero marks.

Many candidates scored one mark for correctly stating the idea that material is dissolved, but often went on to state that this was due to corrosion. As this is in the question, it could not be credited for the second mark. The responses awarded two marks correctly explained that acid causes the material to be dissolved or that it was a result of water flowing past.

Question 1 (d)

This question required candidates to use Figure 1a, which showed details of flood prevention measures in York, to explain an advantage and disadvantage of the measures shown.

The credit for these type of 'explain' questions comes from correctly identifying an advantage/disadvantage from a strategy shown in the resource (AO3) and then developing this to explain its impact (AO2).

Candidates were not awarded for just lifting a strategy written in the resource. The 'advantage' part of this question was answered less well than the 'disadvantage' part of the question as many candidates only directly lifted the text 'protects 56 homes and businesses from flooding'. The 'disadvantage' part of the question was answered well with many candidates using the idea of '14 trees are removed' and developing to identify the impact on rates of infiltration/surface runoff and developed this to link to increasing flood risk.

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

Explain **one** advantage and **one** disadvantage of the flood prevention measures shown.

(4)

Advantage

Since the height of the flood defenses in the area are being increased it protects 56 homes and businesses from flooding. This can save peoples homes from being flooded and save many jobs for the people that work in the businesses. Since it increases flood prevention.

Disadvantage

The disadvantage of the flood prevention is that the defenses are hard engineering which means they don't look natural and quite ugly. Despite their effectiveness it will reduce the amount of tourists that visit the area. Also 14 trees are getting removed, which is leading into deforestation.



The advantage clearly uses evidence from the resource, but develops this idea to explain that this saves jobs of people working in the businesses.

The disadvantage also uses the resource to gain the AO3 credit - 'use hard engineering which don't look natural' - and develops this for the AO2 credit - 'which may reduce tourists that visit'.

4 marks

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

Explain **one** advantage and **one** disadvantage of the flood prevention measures shown.

Advantage

Hard engineering ^{defences} ~~defences~~ ^{are} more effective, and will last longer ^{and can be built higher} than soft engineering, as less permeable materials like concrete are used, rather than sand for embankments which can be washed away. (4)

Disadvantage

Trees must be removed, which destroys habitat and may decrease biodiversity in the area, making the ecosystem less stable due to a possible decrease in complexity of the food web.



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Examiner Comments

The advantage gains the full two marks: for the AO3 - 'hard engineering is more effective' and for the AO2 - 'as it lasts longer than soft engineering'

The disadvantage also gains the full two marks: for AO3 - 'trees must be removed which destroys habitats' and for the AO2 - 'which may decrease biodiversity in the area'.

4 marks

Question 1 (e)

Candidates were asked to explain the influence of urban land use on river regimes.

Generally, this question was answered well with many candidates awarded full marks. However, a number of candidates were confused by the term 'river regime' and instead explained the impact of pollution (often agricultural) on water quality in a river. Another misconception was candidates understanding of the term 'urban land use' as a few candidates responded using arable land use examples.

It is important to ensure candidates have a clear knowledge of geographical terminology to avoid misinterpreting the question.

(e) Explain how urban land use can affect river regimes.

(3)

Roads and pavements are often made of concrete, which is impermeable. This means that rainfall will run straight off the surface into rivers, decreasing lag time. This means that the river's discharge will increase, possibly to higher than the river channel's capacity, causing flooding.



This response clearly explains the influence of urban land use on the discharge of a river.

3 marks

(e) Explain how urban land use can affect river regimes. **surface run-off.**

(3)

In urban areas, there are more impermeable surfaces such as concrete and tarmac, which reduce infiltration of water into the ground, so there is more surface run off. This along with man-made structures such as drains mean that water reaches the main channel faster - so the lag time is reduced.



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This response also explains the influence of urban land use on a river regime including the detail about how urban drainage can also influence discharge.

3 marks

Question 1 (f)

The majority of candidates were able to identify peak rainfall as the feature labelled on the hydrograph.

Question 1 (g)

This question required candidates to explain how erosion forms a waterfall.

Generally, the majority of candidates were able to score some marks on this question. Candidates who scored 3 or 4 marks tended to use more specific geographical terminology and were able to explain a sequence of events. A few candidates explained the formation of a meander rather than a waterfall, which were awarded zero marks. In some instances, diagrams were used to good effect to show more clearly what was explained in the written response.

(g) Explain how erosion can form waterfalls.

Successive collapses gradually taking place eventually creates gorges. (4)

harder more resistant to erosion rock

softer rock (less) resistant to erosion.

hydraulic action: sheer force of water creates plunge pool and causes waterfall

overhanging rock.

erosion forms waterfall: rocks - hydraulic action erodes soft rock creating plunge pool - Corrosion & cavitation

undercutting causes hard rock to crumble making bits of rock enter plunge pool.

swirl pool - abrasion and attrition - undercutting caused.

plunge pool

Corrosion + cavitation further enlarges plunge pool

rocks fallen from hard rock enter plunge pool and in swirl pool: abrasion and attrition happen further causing undercutting.

erosion wears down less resistant rock due to hydraulic action creating plunge pool where corrosion, cavitation and abrasion further enlarges it creating undercutting and overhang of hard rock which eventually crumbles so rocks in swirl pool undergo corrosion and abrasion and attrition of waterfall.



This response shows how to achieve full marks using an annotated diagram.

There is clear detail about the different types of rock: undercutting, collapsing overhand and retreat upstream.

4 marks



Annotated diagrams are as effective in achieving full marks as purely written answers.

(g) Explain how erosion can form waterfalls.

(4)

The hard rock is on top of the soft rock, the soft rock is eroded by hydraulic action, this forms an overhang as the soft rock is less resistant, so it wears away by hydraulic action and abrasion. This forms a plunge pool ~~as~~ by hydraulic action mainly. Then the hard rock overhang ~~can no longer~~ falls into the plunge pool which is abrasion of the rocks crashing into the river bed and also attrition of the rocks and pebbles banging together, rounding each other off.



ResultsPlus
Examiner Comments

This response clearly explains the sequence involved in waterfall formation.

They explain the role of different rock types, the formation of an overhang and detail about the specific type of erosion that creates the plunge pool and the fact the overhang collapses.

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.

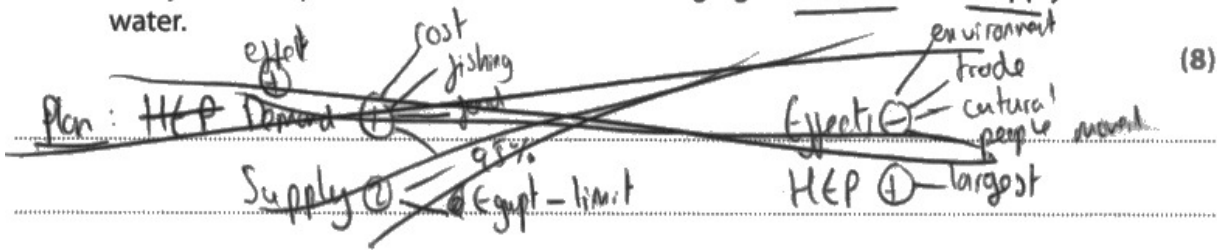
Many candidates clearly used the resource to describe the issues created as a result of this dam being built. Although, there were some common misconceptions about the Nile flowing North to South and therefore Egypt having control over the water rather than Ethiopia. Some responses were less focused on supply and demand.

To access the higher marks candidates need to go beyond simply describing what is shown in the resource, but provide several clear developed reasons for the importance of this dam on water supply and demand. 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.

CS → 3 gorges

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

Analyse the importance of this dam for managing the demand and supply of water.



Ethiopia is a landlocked country which does not have many fresh water resources. As seen in fig 1c, in Ethiopia, the dam will provide fish for milliw and food and fresh water. For example, the 3 gorges dam in China, which is the largest in the world provides food for 14 million people. Furthermore, dams can be a good way to manage flood risk as the water can be controlled. It also creates reservoirs of 74 billion cubic metres as seen in fig 1c - for Ethiopia, which can eliminate drought

However as seen in fig 1c it will have a large effect on Egypt. There are 'concerns that it could limit water supplies' to Egypt and 95% of water in Egypt is from the Nile. Building a dam upstream also limits the water supply down stream and can create water stress (less than 1700m³ per person per year). Also Egypt's farmers will have less nutritious soil as there will be less silt and aluminium in the water so when the river floods, it and bursts its banks, the fields will produce a smaller yield. This could harm the economy of Cairo of Egypt. It will also cost \$5 billion which could harm Ethiopia's economy. Therefore as seen in fig 1c, Egypt wants an agreement to add water to the Nile if there is drought as seen in fig 1c

However, the negative effects in Ethiopia are that many people will have to move. When building the 3 gorges dam, 1.6 million people had to move and 8000 cultural sites were destroyed. Also, the water will destroy wildlife and create droughts down stream. The decrease of ~~the~~ trees will cause landslides and there will be limits to trade. And due to the fact that Ethiopia ^{is landlocked, this could harm its economy} (Total for Question 1 = 25 marks)

However the dam will be the Africa's largest hydroelectric power project and would be a source of renewable energy that would not harm the environment. The 3 gorges dam provided 10% of ~~China's~~ China's whole energy and was the same energy as 50 million tonnes of coal. Therefore less carbon would be released in the construction of the Grand Renaissance dam. Also cities e.g. Addis Ababa ~~will~~ will have more energy and could increase its economy. The energy could also be sold to neighbouring countries e.g. Uganda, South Sudan, Sudan as seen in Fig 1c. This would increase the economy of Ethiopia and help it develop.



Although this response is not perfect, it is detailed enough for a Level 3 response.

The candidate has clear evidence of engaging with the resource (AO4) and clearly demonstrates their understanding of the issue (AO3). Although they use China as an example, it is used to support their argument about the dam shown in the resource and therefore, is creditable for AO3.

There is use of 'analyse' throughout their answer with terminology like 'however', 'good way', 'therefore', 'furthermore'. This candidate also links the issue to drought and flooding which further supports the ideas linked to water supply. The ideas linked to food supply (fishing and crops) are implicitly linked to water demand and they have the idea linked to HEP at the end which is relevant AO4, but less focused on supply and demand.

Question 2 (b)(ii)

In this question, candidates were required to state a type of transport that occurs along the coast.

Candidates have a clear knowledge of different transport processes with a high proportion of candidates gaining credit. A very few candidates stated a type of erosion rather than transport.

(ii) State **one** transportation process that occurs along a coastline.

(1)

Waves



'Waves' was not credited as a correct transport process.

0 marks

(ii) State **one** transportation process that occurs along a coastline.

(1)

Mass movement



Mass movement is not a correct transport process.

0 marks

(ii) State **one** transportation process that occurs along a coastline.

(1)

Long-shore drift



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Examiner Comments

Longshore drift was the most commonly named transport process.

1 mark

Question 2 (c)

In this question, candidates were required to explain one way to reduce the impact of coastal flooding.

Candidates were awarded for explaining a strategy that reduces the impact of a coastal flood, including points linked to soft engineering, as well as points linked to hard engineering preventing coastal flooding which leads to there being no impacts as no flood occurs.

The majority of candidates were awarded the full two marks on this question.

(c) Explain **one** way to reduce the impact of coastal flooding.

(2)

Sea walls may be built to reduce the energy of waves that approach the end of the beach. Therefore, the water retreats and does not damage any buildings and cause loss of life or property or money.



This is an example of how hard engineering was credited as a way to reduce the impact of coastal flooding.

2 marks

(c) Explain **one** way to reduce the impact of coastal flooding.

(2)

~~To put in place an advanced warning system to help people to prepare for the flood and to reduce damage to property and deaths~~

To put in place an advanced warning system to help people to prepare for the flood and to reduce damage to property and deaths



ResultsPlus
Examiner Comments

This is an example of how candidates used the idea of forecasting to help reduce damage.

2 marks

(c) Explain **one** way to reduce the impact of coastal flooding.

(2)

one way to reduce the impact of coastal flooding is by building flood proof houses raised off the ground on stilts. This will mean that water doesn't get into the house and destroy people's belongings, hence reducing the impact



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Examiner Comments

This candidate explained the role of building design to reduce the impact of coastal flooding.

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 this type of 'explain' question comes from correctly identifying a possible conflict from the information given in the resource (AO3) and then developing this to explain why this causes conflict (AO2). Candidates were not awarded for just lifting a strategy written in the resource.

Candidates, on the whole, understood the idea of conflict and used examples of coastal management shown in the resource. The better responses used a specific conflict between locations or explained potential conflict between two interested parties within the same location. A few candidates were less clear on the idea of conflict and gave simple advantages and disadvantages of the strategies shown in the resource which often limited responses as conflict was implied rather than explicit.

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

Explain **two** reasons why there may be conflicts over the coastal management strategies chosen.

(4)

1 IN EL ZABAI, THERE IS NO ACTION TOWARDS COASTAL MANAGEMENT (THIS IS MANAGED REEF). CONSERVATIONISTS WILL BE HAPPY WITH THIS OPTION AS THEY WANT TO CONSERVE NATURE HOWEVER BUSINESS OWNERS WANT BE HAPPY BECAUSE THEY WANT TO PROTECT THEIR BUSINESSES

2 IN CAIETA DE VÉLEZ, HOME OWNERS WANT BE HAPPY WITH GABIONS AND SEA WALL AS IT LOOKS UNNATURAL AND UNNATURAL HOWEVER BUSINESS OWNERS WILL BE HAPPY WITH THIS STRATEGIE AS IT PROTECTS THEIR BUSINESSES.



This candidate has given two conflicts relating to different interested parties within the same location.

Demonstrating clear AO3 and AO2 – 4 marks

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

Explain **two** reasons why there may be conflicts over the coastal management strategies chosen.

(4)

- 1 In EL Zabal, buisness owners may ~~be~~ feel neglected that there has been no strategies set to protect this areas & that their buisnesses are at risk especially so close to the sea
- 2 In Puerto Barrios ^{as} there are tourists it is managed to protect so to not make the area unattractive so people still visit but residents may feel unprotected & want something put in place so they don't have to leave



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This response has clear AO3 credit with specific links to the resource. In the first answer, the conflict is more implied but still worth two marks – 'business owners may feel neglected' (1) because there are no strategies which puts their business at risk (1).

The second conflict is clear as they explain the views to two groups tourists and residents.

4 marks

Question 2 (e)

Candidates were required to explain one way climate change may affect coastal environments. This could be linked to coastline flooding and erosion as well as other coastal environments such as coral reefs and mangroves. In this question, candidates are required to focus on one idea and develop it in detail to access the 3 marks available.

The majority of candidates achieved full marks, clearly explaining the impact of climate change.

(e) Explain **one** way climate change may affect coastal environments.

(3)

Global warming, through ~~isostatic~~^{eustatic} changes, causes the melting of alpine glaciers so the volume of water in the sea increases. Therefore low-lying land on the coast is at risk of flooding or being entirely submerged such as the Maldives.



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This response has a clear explanation of one way climate change may affect the coastal environment.

3 marks

(e) Explain **one** way climate change may affect coastal environments.

(3)

. Global warming may cause coral reefs to die, as their optimum temperature is between 27°C-27°C. As sea temperature and acidity rises due to increased CO₂, the coral reefs will undergo bleaching where the zooxanthellae are expelled, meaning the coral will be unable to make food for itself and therefore eventually die.



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This candidate has achieved 3 marks by explaining the impact climate change will have on coral reef ecosystems.

Question 2 (f)

The majority of candidates correctly identified the type of wave shown.

Question 2 (g)

This question required candidates to explain the formation of a cave.

Generally, the majority of candidates were able to score some marks on this question. Candidates who scored 3 or 4 marks tended to use more specific geographical terminology and were able to explain a sequence of events. However, some candidates confused the formation of a cave with headland and bay formation and also the formation of wave-cut notches.

A number of candidates supported their written answers well with diagrams and explained the specific types of erosion/weathering predominantly responsible at different stages of the formation process.

(g) Explain the formation of a cave.

(4)

Caves form when hydraulic action and abrasion take place. The waves attack the rock and air gets trapped adding pressure to the crack and weakening it. Over time the crack gets bigger and the waves keep attacking it. freeze-thaw may also take place and aid hydraulic action. ~~the~~ Small rocks and sediment may also attack the ~~the~~ rock by getting thrown at by the waves, weathering it.



This candidate clearly explains the types of erosion responsible for the formation of the crack (1). They go on to explain the idea of erosion occurring over time/repetition (1) and the impact of freeze-thaw weathering (1) leading to the crack widening (to form a cave) (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 analyse the importance of managing the threats to coral reef ecosystems. There was a tendency for candidates to describe each threat, shown in the resource separately, which meant their responses became very repetitive and often were not focused on why it is important to manage these threats. The better responses grouped the threats together, which meant they could spend more time on the 'importance' element of the question. A few candidates directly lifted the threats from the resource with no additional detail and these were awarded zero marks.

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 2c in the Resource Booklet.

Analyse the importance of managing the threats to this coral reef ecosystem.

(8)

Some chemicals from sunscreens are not very important and not a big priority to manage in the coral reef ecosystem as the tiny bit of chemicals won't affect much compared to the level of pollution that will, therefore it isn't very important to manage. []

Storm water runoff leading to chemicals and sediments reaching the water is a quite important threat to manage, as we can see in the figure 2c the pollution has reached the coral, which means the water is polluted, and this could be due to the chemicals and sediments reaching the water. This could also lead to the coral dying, destroying the reef.

Even though road construction causing air and water pollution sounds like a huge threat to the coral reef ecosystem, we can see in figure 2c that the pollution given off from it (7) is not much and not really leading to the ecosystem, so I would say it isn't really affecting the reef.

The most important threat to manage is the oil and chemical spills causing water pollution, as the pollution is presented as the most in figure 2c, going the deepest into the water, affecting the coral reef ecosystem by a huge amount. This problem

needs to be solved, and of the highest importance,

(Total for Question 2 = 25 marks)

[However, the pollution is still visible on the figure, so it is still a threat that should be kept an eye on.]
(put in [] at the page before)



This is a low Level 2 response – 4 marks.

The candidate has worked through the threats presented in the resource and described the impact they may have in a very basic way – 'lead to coral dying and being destroyed' – in a couple of places.

Although, this candidate attempts to show judgement, their interpretation of the numbering in the figure is incorrect as the threats are not ranked. This response misses the main focus of the question where they are required to analyse the importance of managing the threats as opposed to ranking the threats themselves.

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

Analyse the importance of managing the threats to this coral reef ecosystem.

(8)

The coral reef shown in Figure 2c is largely at threat. Point 1 shows that there is a failed sewage system from the residents of the area and this is about to come into contact with an aquifer of groundwater. This sewage needs to be cleaned and the system needs to be repaired or the sewers will pollute the ocean and make the water dirty preventing sunlight from reaching the corals. Point 2 shows that chemicals from sunscreen is being washed into the sea, this would be very hard to prevent however it is at a minor scale so should be left. Point 3 shows that sediments from building is reaching the water. These should be carefully managed as they would again cause the water to appear dirty preventing the penetration of sunlight to the corals. Point 4 shows that chemicals are running off land and into the ocean due to storm water runoff. These chemicals are toxic for fish and the polyps in the coral reef so need to be washed and taken care of. Point 6 also shows that harmful chemicals are causing water pollution, this time by oil spills. Point 7 shows water pollution but also air pollution which contributes to global warming and the increase in ocean temperatures. This could lead to coral bleaching if temperatures exceed ^{the} optimum temperature. Point 8 shows that agriculture causes chemicals, fertilisers to leak into the soil and reach the water. This could cause an algae bloom, eutrophication and a barrier of sunlight for the corals. Also the decrease in oxygen in the water is harmful to the coral reefs.



This is a top Level 2 response – 6 marks.

This candidate works through some of the threats shown in the resource correctly to gain AO4 credit and builds on these to explain why they cause harm to the coral reef ecosystem and therefore need to be managed for AO3 credit. There are several reasons given linking to photosynthesis, biodiversity and coral bleaching.

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

Analyse the importance of managing the threats to this coral reef ecosystem.

(8)

As shown in figure 2c, failed sewage systems are leaking into the underwater pipeline that ~~is~~ leads to the sea. This is very harmful to the ~~seas~~ sea because ~~there~~ ~~there~~ ~~is~~ algae bloom could be triggered from the chemicals in the untreated waste. This causes eutrophication in the sea where algae covers the surface and blocks out sunlight. This harms the corals as they aren't able to reach the sunlight for photosynthesis. They should manage their sewage system by fixing it to avoid this.

As shown in figure 2c, ~~clean~~ oil and chemical spills from factories are causing water pollution. This is very harmful to the coral reefs because the chemicals are very toxic so the fish and other marine life that consume such ^{chemicals} may die. This ^{disrupts} ~~affects~~ food chains and harms the ecosystem because the interlinked relationships between the consumers and producers are affected, leading to a less healthy environment for the coral reefs as well. Additionally, figure 2c shows that agriculture causes chemicals to leak into soil and reach the water. This may damage the coral reefs themselves on top of killing fish because it ~~leads to~~ could lead to ocean acidification in which corals are bleached permanently overtime.

and die. This is extremely harmful as it is irreversible so is important to manage so that tourists can also enjoy colourful scenery of corals so the community can generate more income as well. Also displayed from figure 2c is that ~~the~~ road construction is causing air and water

(Total for Question 2 = 25 marks)

pollution. ~~This~~ This suffocates the fish as the ~~change~~ composition of water becomes polluted so they die more easily, again disrupting food chains. However, ~~they~~ physical solid waste from construction could also damage the sea bed which prevents corals from forming. In conclusion, it is very important to manage all these mentioned to preserve the ecosystem from being polluted as ~~they~~ ^{organisms} are highly dependent on each other.



This is a Level 3 – 8 mark response.

This candidate works through a range of threats shown in the resource for strong AO4 credit and explains a range of impacts this can have on coral reef ecosystems for strong AO3 credit. This candidate has evidence of analysis having a brief but valid conclusion at the end, but uses language like 'very harmful' in their answer.

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

Analyse the importance of managing the threats to this coral reef ecosystem.

(8)

If threats to coral reef systems are not managed and corals are not protected then these systems will die. Therefore the result will be a massive loss of biodiversity.

- The result of human inhabitation near coral reef systems is huge. The ~~cost~~ beauty of the coral themselves is a threat to themselves. Many tourists will be attracted to the area. But, as shown in Figure 2c the label 2 shows how chemicals from sunscreen can harm coral. Not only does this threat by tourists (also includes subdiving that could damage coral) cause a loss of biodiversity, the loss of the coral will lead to less tourist attraction, therefore a decrease in economic profit for the locals. To manage this safer precautions should be put in place for tourists, for example washing of sunscreen before going in the sea (providing showers) ~~or~~ and having instructors provide safe instruction on scuba diving in very limited amounts.

- Building of infrastructure is also a great threat to coral reefs. Figure 2c shows a diagram of this coastal area. It shows a large city with skyscrapers. Label 4 would (as the source states) result in sediment reaching the water (from the building) expansion of these cities requires road construction as shown in (7)

this construction causes air and water pollution. This air pollution can contribute to the greenhouse (enhanced) effect that would increase the temperature of the water that the coral is in (optimum 25°C) and the coral would bleach causing mass loss of biodiversity.

— spills of pollution into (Total for Question 2 = 25 marks)

the water causes the coral to die. due to there being a large population by least a sewage system is needed. yet spills from this will harm the coral.

Increased industrial production is also a threat due to oil and chemical spills causing water pollution (shown in label 6)

— a very dangerous threat to coral is the leakage of agricultural chemicals into the water. (figure 8) this could be agriculture to feed inhabitants of the cities nearby.

— Eutrophication is when fertilisers run off into sea can cause algae blooms on surface of sea. this will lead

to less/no sunlight getting to the coral so they can't photosynthesis. (I know they don't photosynthesise by the

fact that they require shallow water so sunlight can reach them. other run offs include chemicals and sediments that will run into the water by storm water.

deforestation is another threat to coastal reef systems

because trees can't hold down sediment with their roots. It can run off by rain into the sea (harmful coral). deforestation also adds to the greenhouse effect which also warms the water.



This is an example of a Level 3 – 8 mark response.

This candidate uses the Figure throughout their answer gaining good AO4 credit and explains the impact several threats will have on the coral reef ecosystem, as well as giving a judgement at the beginning of their response and using language such as: 'great impact' within their writing to gain high level AO3 credit.

Question 3 (b)(ii)

Most candidates were able to score a mark on this question being able to state a factor that can affect tropical storm formation.

(ii) State **one** factor that can affect tropical cyclone formation.

(1)

loss of buildings



This response states an impact rather than a factor in formation.

0 marks

(ii) State **one** factor that can affect tropical cyclone formation.

(1)

coriolis force



A correct factor stated.

1 mark

(ii) State **one** factor that can affect tropical cyclone formation.

(1)

Sea Temperature



Sea temperature or just temperature on its own was enough to award 1 mark.

Question 3 (c)

For this question, candidates were required to identify a correct long-term impact of a tropical cyclone (AO1) and explain a consequence of this (AO2).

Candidates were awarded for long-term impacts plausible in both developing/emerging and developed countries.

Most candidates were clear on the idea of long term impacts and the consequence of these, achieving full marks for this question.

(c) Explain **one** long-term impact of a tropical cyclone.

(2)

The flooding of a tropical cyclone can lead to disease which can spread among the population, causing deaths over a long period of time.



Spreading disease (1) causing deaths over a long time (1).

2 marks

(c) Explain **one** long-term impact of a tropical cyclone.

(2)

A tropical impact of a cyclone could be damaging or destroying buildings, this means people are forced to find new homes or wait for it to be rebuilt.



Damage to buildings (1) so people are forced to find new homes (1).

2 marks

Question 3 (d)

This question required candidates to use Figure 3a, which showed information about Mount Etna's eruptions and settlement distribution, to explain two reasons why people continue to live in areas at risk from volcanoes.

The credit for this type of 'explain' question comes from correctly identifying a possible reason from the information given in the resource (AO3) and then developing this to explain why people live in the area (AO2).

The type of settlements were not made explicit in the resource and therefore any plausible activity that could be carried out in a settlement was awarded. The most frequent reasons given by candidates were linked to agriculture and tourism.

A few candidates gave the reasons lack of education and eruptions do not happen often. These were not credited as neither can be reasonably inferred from the resource as Italy is a developed country and the resource states 'it's Europe's most active volcano', therefore suggesting people will be aware of the risk.

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

Explain **two** reasons why people continue to live in areas at risk from volcanoes.

(4)

- 1 From figure 3a there are many settlements around the base of Mt Etna as volcanoes have a lot of natural resources that can benefit people. For example, volcanic ash can act as a fertiliser on agricultural land which can lead to better crop yields for farmers.
- 2 Another reason is that tourists like to visit volcanoes which generates ~~more~~ money and improves the economy of the local people. From figure 3a there ~~are~~^{is a} settlements near the ~~base~~^{Summit crater} which would be a popular tourist destination.



This response has two clearly developed reasons for 4 marks.

Volcanic ash as fertiliser which increases crop yields for farmers – 2 marks.

Tourists like to visit volcanoes (1) which generates money for the economy (1) – 2 marks

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

Explain **two** reasons why people continue to live in areas at risk from volcanoes.

(4)

- 1 One reason people may continue to live in areas at risk is because they ~~do not~~ ~~think~~ ~~it~~ ~~is~~ ~~too~~ ~~dangerous~~ ~~to~~ ~~live~~ ~~in~~ ~~there~~ ~~and~~ ~~the~~ ~~ash~~ ~~from~~ ~~a~~ ~~volcano~~ ~~is~~ ~~good~~ ~~for~~ ~~farming~~ ~~is~~ ~~fertile~~ ~~land~~ ~~and~~ ~~so~~ ~~the~~ ~~positives~~ ~~outweigh~~ ~~the~~ ~~negatives~~.
- 2 People may not be able to afford to move out from the settlements near volcanoes in 3a. This means that they have to live with risk but the risk may not be too high for them as they know that they can evacuate if they have to.



ResultsPlus
Examiner Comments

This response has two creditable reasons linked to fertile land being good for farming in the first reason and people not being able to afford to move and so they have to live with the risk in the second reason.

4 marks

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

Explain **two** reasons why people continue to live in areas at risk from volcanoes.

(4)

- 1 One reason is due to fertile soil, as ash enriches the soil. As shown in figure 3a, many people may live near Mount Etna, as the fertile soil allows them to grow crops and sell them, so they can make a livelihood. Therefore, fertile soil^{near volcanoes} is beneficial.
- 2 Another reason may be due to a lack of awareness about the risks of a volcanic eruption. As shown in figure 3a, many people may live in Catania, due to a lack of education about the negative impacts of a volcanic eruption, such as pyroclastic flow, so therefore continue to live there.



This response was awarded 2 marks for the first reason linking to fertile land. However, the second reason given is not plausible from the resource provided and so is not worth credit.

This answer was awarded 2 marks overall.

Question 3 (e)

For this question, candidates were required to identify a correct building design strategy and explain why this helps to prepare for earthquakes. In this question, candidates are required to focus on one idea and develop it in detail to access the 3 marks available.

The majority of candidates achieved full marks clearly explaining the influence of one building design strategy on preparation. However, some candidates explained how building design helps to prepare residents for an earthquake without suggesting a specific building design method which limited their answer. A few candidates focused on preparation strategies not related to building design, for example having supplies of food/water, which did not meet the requirements of the question.

(e) Explain **one** way building design can help prepare for earthquakes.

(3)

One way building design can help prepare for earthquakes is using rolling weights on the tops of high-rise buildings. These counteract the seismic waves of earthquakes by rolling the other way so to stabilise the building and preventing it from collapsing or being destroyed.



This response clearly explains one strategy fully: rolling weights on the top of buildings (1) which counteract the seismic waves (1) preventing the building from collapsing (1).

3 marks

(e) Explain **one** way building design can help prepare for earthquakes.

(3)

One way a building design can help prepare for earthquakes is by putting counter weights on the top of the building. This prevents the building from moving and collapsing when an earthquake occurs, as the weights counteract the shaking. As a result, ^{fewer} ~~less~~ buildings collapse, so there are less injuries and deaths, and reduces economic loss.



This is another example of a candidate fully explaining one strategy to gain 3 marks.

Question 3 (f)

The majority of candidates correctly identified a potential short-term impact of a tropical cyclone.

However, a few candidates misinterpreted the hazard shown in the resource for a volcanic eruption and gave impacts linked to ash clouds which were not credited. A few candidates gave types of weather hazard linked to tropical cyclones e.g. strong winds/heavy rain rather than the actual short-term impacts these hazards create.

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

Identify a potential short-term impact of the hazard shown.

(1)

no electricity



ResultsPlus
Examiner Comments

Correct potential short-term impact

1 mark

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

Identify a potential short-term impact of the hazard shown.

(1)

Heavy rainfall



ResultsPlus
Examiner Comments

This is an example of a hazard caused by a tropical cyclone, not the impact of the hazard.

0 marks

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

Identify a potential short-term impact of the hazard shown.

Destruction of infrastructure such as housing by ^{strong} winds. ⁽¹⁾



ResultsPlus
Examiner Comments

Correct potential short-term impact.

1 mark

Question 3 (g)

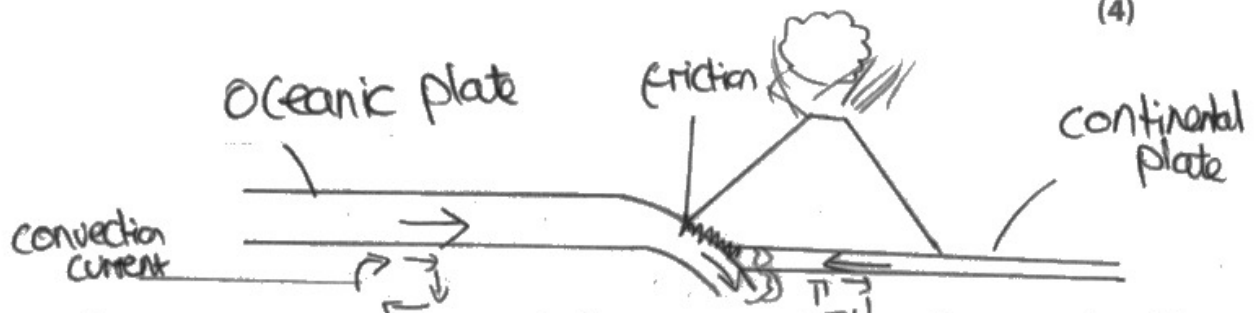
This question required candidates to explain how volcanoes are formed at a destructive plate boundary.

Generally, the majority of candidates were able to score some marks on this question. Candidates who scored 3 or 4 marks tended to use more specific geographical terminology and were able to explain a sequence of events. However, some candidates confused the type of plate boundary, writing about a constructive plate boundary instead which was not credited.

A number of candidates supported their written responses with diagrams which often showed the direction of plate movement which was useful as this was often missed at the start of a lot of written answers meaning a number of candidates achieving 3 rather than 4 marks.

(g) Explain how volcanoes are formed at a destructive plate boundary.

(4)



At a destructive margin 2 plates move towards each other driven ^{together} by convection currents in the earth's mantle. The denser oceanic plate subducts beneath the continental plate and melts due to friction, intense heat and pressure. Molten material makes its way to the earth's surface as it is lighter and erupts through the surface through cracks and fissures in the plate. Over time layers of lava and ash build up leading to the formation of a volcano. Composite volcanoes are formed at destructive margins.



This response explains the full sequence to explain how volcanoes form at a destructive plate boundary.

4 marks

(g) Explain how volcanoes are formed at a destructive plate boundary.

(4)

The magma rises through the oceanic and tectonic plates. Destructive boundary is when both the plates pull apart. Pressure builds up, when the pressure is released, lava explodes to the surface. After the lava is cooled down, it will form a new crust. After a several volcanic eruptions, more and more crust will build up to form a volcano.



This candidate has written about a constructive/divergent plate boundary and therefore was not awarded 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 analyse the hazard risk from the predicted distribution of tropical cyclones shown in the resource. A number of candidates focused solely on the preparation measure shown in the table in the figure which limited their answer as the idea of risk was not really analysed, rather the effectiveness of preparation strategies which meant their argument lacked balance. While analysing the hazard risk for the areas shown in the figure, candidates mainly focused on population density, economic development and preparedness of countries/cities and the intensity of tropical storms. Few candidates focused on the idea that vulnerability of areas are differing depending on the season and geographical location. Candidates were familiar with the geographical terms such as: Saffir Simpson Scale, storm surge, Coriolis force and 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 in the Resource Booklet.

Analyse the hazard risk from this predicted distribution of tropical cyclones.

(8)

As seen in fig 3c, Hong Kong is exposed to level four on the Saffir Simpson scale. This would be destructive, however, Hong Kong has implemented stringent building codes to create life - safe buildings safe from high winds. As seen in fig 3c, the storm season peak is August, when there are likely to be lots of tourists. This could pose a high risk as they could be uneducated.

As seen in fig 3c, Manila (Philippines) is exposed to level 5. This means 250+ km/h winds. I know that Philippines is an LIC, therefore they may not have the strong infrastructure of Hong Kong and may be at higher risk of property damage.

As seen in fig 3c, Darwin has only a level 1 (or even 0) exposure. Australia is an HIC, and as seen in fig 3c, they have building standards to protect against high winds. As seen in fig 3c, Hong Kong's population is 7.5 million compared to Darwin's 0.13 million. This makes Hong Kong at higher

risk as more people would be affected. For example, in Cyclone Idai, in Mozambique, a relatively high pop. density meant over 2.6 million people were affected, showing the danger of a high pop. density.

As seen in fig 3c

(Total for Question 3 = 25 marks)

Manila has a tropical system. This means they will know a few hours before (or minutes) the cyclone hits. I know that this can be very beneficial in reducing the risk as in the boxing day tsunami in Japan, the few minutes warning saved hundreds of lives.

In conclusion, Hong Kong are at very high risk as they have a high pop. density + exposed to level 4, Manila are also at high risk as exposed to level 5 & are also an LIC, so have less money to spend on prediction. Darwin is at very low hazard risk. The Philippines is also a hazard hotspot so the risk is even higher (earthquakes, cyclones, tsunamis + landslides).



This response, although not perfect, is enough to gain Level 3 – 8 marks.

The candidate uses several pieces of information from the resource to gain strong AO4 credit and is able to explain how this may increase or decrease the risks. This response makes reference to level of development, population density, strength of hazard, time of year and preparation to show range and balance in their AO3, as well as including judgement in their argument to state which country is at most risk.

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

Analyse the hazard risk from this predicted distribution of tropical cyclones.

(8)

You can see in figure 3c that Hong Kong is predicted a level four ~~for~~ ~~the~~ tropical cyclone, which has speeds ~~between~~ at 210-249 km/h. ~~Therefore, this~~ This shows more is a great hazard risk in Hong Kong because the storm is extremely intense therefore will do more damage than, for example, a level two storm in Australia. However, Manila in the Philippines is predicted ^{a chance of} the worst ⁱⁿ tropical cyclone intensity of level 5 on the Saffir Simpson scale. This means that windspeeds would reach 250+ mph, which will cause extreme amounts of damage. For example, Hurricane Katrina in 2005 was level 5 and caused many deaths along with homelessness and communication failures. Therefore, the ^{high} intensity and scale of the ~~earthquake~~ ~~is~~ cyclone causes a greater risk as it will be ~~more~~ stronger.

Furthermore, ^{a high} the population ^{in an} ~~of~~ ~~the~~ area will cause a greater hazard ~~risk~~ ~~because~~ ~~there~~ ~~is~~ risk. For example, in Hong Kong, they have a population of 7.50 million. This ~~is~~ causes a greater hazard as there is a greater number of people that are able to be hurt, and it also ~~more~~ means

there is a higher population density and building density which causes more injury & infection.

Furthermore, you can see in figure 3c that

some countries are more (Total for Question 3 = 25 marks)

prepared than others. For example,

~~the~~ the public education programme in Hong Kong and the communication evacuation routes in Manila ~~give~~ decrease the hazard risk because people have a greater knowledge and awareness of the cyclone, so they have a greater chance of being safe.

Furthermore, you can see in figure 3c that Darwin has buildings that can withstand high winds. ~~For~~ I know from my own knowledge that this could include steel reinforcements and ~~of~~ deep foundations. This decreases the hazard risk because the buildings are less likely to collapse, decreasing the risk of the death of no people in them, the problems of road access for emergency services and the homelessness caused by cyclones.

In conclusion, I think a combination of physical ~~to~~ factors like the predicted intensity and, the preparation of the country like building design and the population of the country all contribute to the degree of risk of the hazard.



This response is also Level 3 – 8 marks.

The candidate works through a range of factors (intensity, population density, preparation strategies) to gain strong AO4 credit and explains how they increase or decrease risk. This candidate makes their judgement on which factor increases hazard risk most as opposed to deciding which location is at most risk, but this is still clear AO3 analysis.

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

Analyse the hazard risk from this predicted distribution of tropical cyclones.

(8)

At the places like Hong Kong, China, Philippines, Australia, India are the places which are in the most danger. Most probably these are the places which are about to get hit the most. The countries should begin to teach the people what to do when the tropical cyclone appears. The Risk assessment part is also a really important part for this. They are about to get hit around four and five times. The population of the countries are mostly very high that means that more people are in danger.



This is a Level 1 – 2 mark response.

There is basic reference to the resource to gain an AO4 mark and very basic AO3 credit – 'this means more people are in danger' and 'countries should begin to teach people what to do' – to gain an AO3 mark.

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

Analyse the hazard risk from this predicted distribution of tropical cyclones.

(8)

From the data shown, it is predicted that in ~~Hong Kong~~ Bangladesh ~~start from~~ the ~~start~~ cyclones ~~start~~ from May till September till May, but the worst is in January.

In Hong Kong, the cyclones ~~are the worst~~ start from June to December and is the worst ~~in~~ in August. ~~This is the time~~ This could be when people have holiday but the 7.50 million people will be in high risk. It is also very similar in Manila because the 1.84 million won't be able to do anything. In Hong Kong they have taught everyone how to react to a cyclone to protect and they send warnings to protect them. Manila also send warning but haven't taught people how to react, however they have evacuation routes.

Darwin has a small population with 0.13 million compared with every other country. But they don't have any warnings or any program to teach people or any evacuation routes but they regulate buildings so that less structural damage could happen.



This is a fairly descriptive response with stronger AO4 credit than AO3 credit.

This demonstrates a Level 2 – 5 mark response.

The candidate works through the times of year different areas are most at risk and uses population and preparation strategies mentioned in the figure. The AO3 is weaker with some basic ideas – 'this could be when people have holidays' – with some basic judgement about the effectiveness of different preparation strategies used in Hong Kong and Manila.

Question 4 (a)(ii)

Please note that the comments made on Q04 also apply to Q05 and Q06 as the questions are in parallel and the resources very similar.

Section B had reduced number of marks in this series and, as a result, fewer questions. There were only questions with unfamiliar fieldwork contexts. There was information provided on the fieldwork context in the exam paper and additional resources in the resource booklet which candidates were required to use.

For this question, candidates needed to name a piece of equipment that would be plausible for the investigation described in the exam paper. There was no credit awarded for basic stationery 'pen/pencil or paper' as the candidates needed to name equipment specific to a geographical enquiry. Ruler was credited in Q04, Q05, and Q06, as it is specific to measuring pebbles or amount of rainfall.

This question was answered well and most candidates were awarded the mark.

(ii) Name **one** piece of equipment the students could have used in their enquiry.

(1)

~~Anemometer~~

measuring tape



ResultsPlus
Examiner Comments

Correct piece of equipment.

1 mark

Question 4 (b)(i)

Q04(b)(i), Q05(b)(i) and Q06(b)(i) were the same across each option. This question 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.

(b) Study Figure 4b which shows some data about river velocity at four sites.

(i) Calculate the mean river velocity at Site 2.

Give your answer to one decimal place.

You must show all your workings in the space below.

(2)

Solve

$$\text{Mean} = \frac{1.2 + 1.0 + 1.2 + 1.3 + \cancel{1.0} + \cancel{1.3}}{4}$$
$$\text{Mean} = \frac{4.7}{4}$$
$$\text{Ans} = \underline{1.175 \text{ m/s}}$$

1.175 m/s



ResultsPlus
Examiner Comments

1 mark – answer not rounded to 1 decimal place.

(b) Study Figure 4b which shows some data about river velocity at four sites.

(i) Calculate the mean river velocity at Site 2.

Give your answer to one decimal place.

You must show all your workings in the space below.

(2)

$$\frac{1.2 + 1.0 + 1.2 + 1.3 + 0.3}{5}$$

$$\frac{5}{5} = 1.0 \text{ m/s}$$

1.0 m/s



ResultsPlus
Examiner Comments

The candidate has not used the correct figures or number of figures required to work out the mean and has not reached the correct answer.

0 marks

(b) Study Figure 4b which shows some data about river velocity at four sites.

(i) Calculate the mean river velocity at Site 2.

Give your answer to one decimal place.

You must show all your workings in the space below.

(2)

$$1.2 + 1 + 1.2 + 1.3 = 4.7 \div 4 = 1.175$$

1.2 m/s



ResultsPlus
Examiner Comments

Correct working and answer to 1 decimal place.

2 marks

Question 4 (b)(ii)

Q04(b)(ii), Q05(b)(ii) and Q06(b)(ii) were the same across each option. This question was answered well with the vast majority of candidates able to identify a sampling strategy.

- (ii) State **one** type of sampling students could have used to choose their data collection sites.

(1)

random



Correct sampling strategy.

1 mark

- (ii) State **one** type of sampling students could have used to choose their data collection sites.

(1)

Systematic sampling



Correct sampling strategy.

1 mark

Question 4 (b)(iii)

Q04(b)(iii), Q05(b)(iii) and Q06(b)(iii) were the same across each option. Most candidates were able to identify the large range shown in the resource and suggest a reason for this occurring which was either specific to the investigation described or, more generically, linking to the idea of human error or an anomaly.

(iii) Suggest **one** reason why the data for Site 1 may not be reliable.

(2)

The data in site 1 varies as compared to the rest of the sites ranging from 0.2 - 1.3 m/s meaning there may have been obstacles such as rock and vegetation causing anomalies to the results. Making it inaccurate.



This response gives enough detail to credit the idea of a large range (1) which is explained by the velocity being affected by an obstacle/vegetation (1) as an enquiry specific reason for the error.

2 marks

(iii) Suggest **one** reason why the data for Site 1 may not be reliable.

(2)

The data for site 1 may not be reliable because the data collected didn't give similar results and there are huge differences in between so they ^{are} could be anomalies.



This was a more typical response seen across Q04, Q05 and Q06

This response gives the idea of a large range – 'there's a huge difference' (1) – so they are anomalies (1).

2 marks

Question 4 (c)(i)

Q04(c)(i), Q05(c)(i) and Q06(c)(i) were the same across each option.

Candidates were awarded one mark for one correctly plotted data point and the second mark for plotting both data points correctly and connecting the plots with a line. Two correct plots without a line connecting them were limited to one mark. The vast majority of candidates were awarded the full two marks for this question.

(c) (i) Complete Figure 4d below, using data highlighted in Figure 4c in the Resource Booklet.

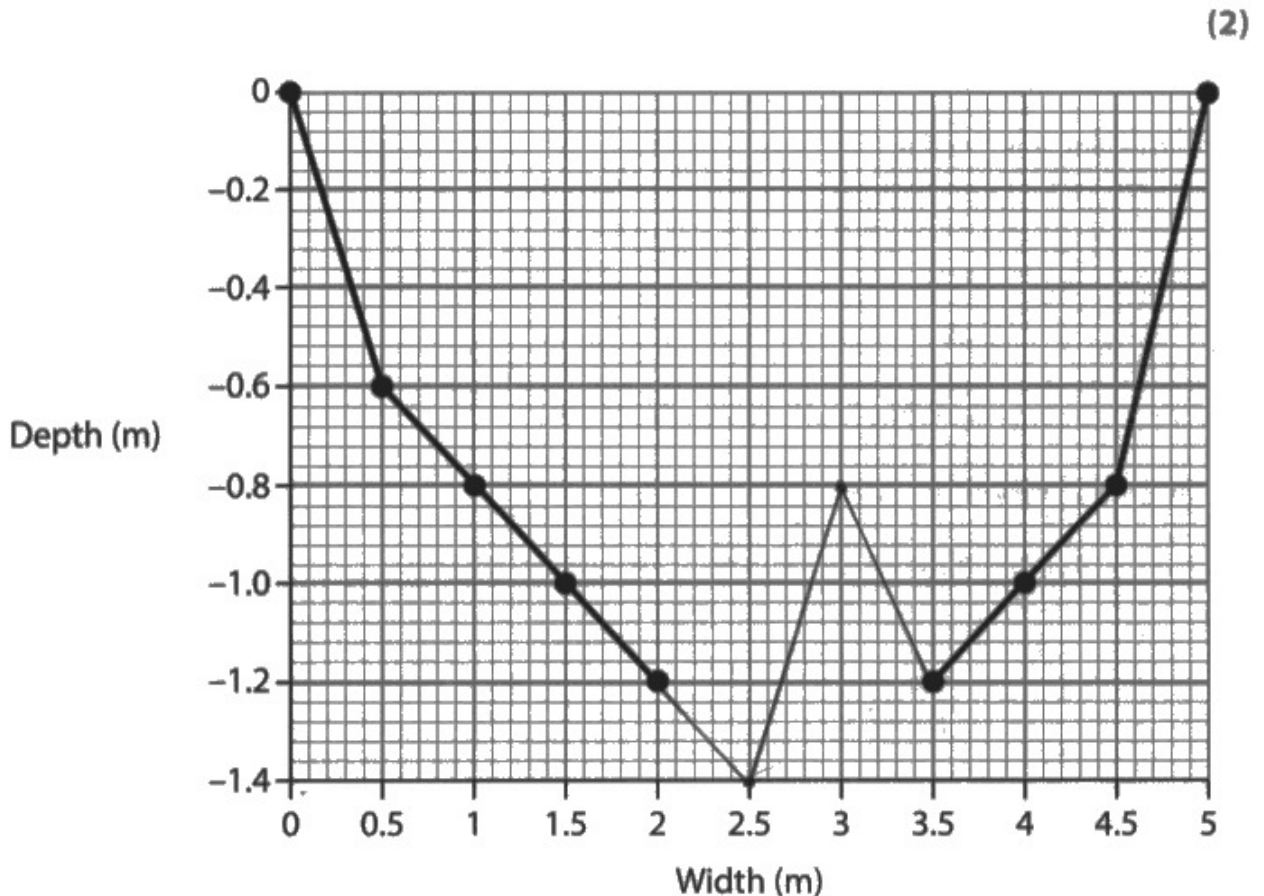


Figure 4d

River channel cross-section



2 marks – correctly plotted points, connected with a line.

(c) (i) Complete Figure 4d below, using data highlighted in Figure 4c in the Resource Booklet.

(2)

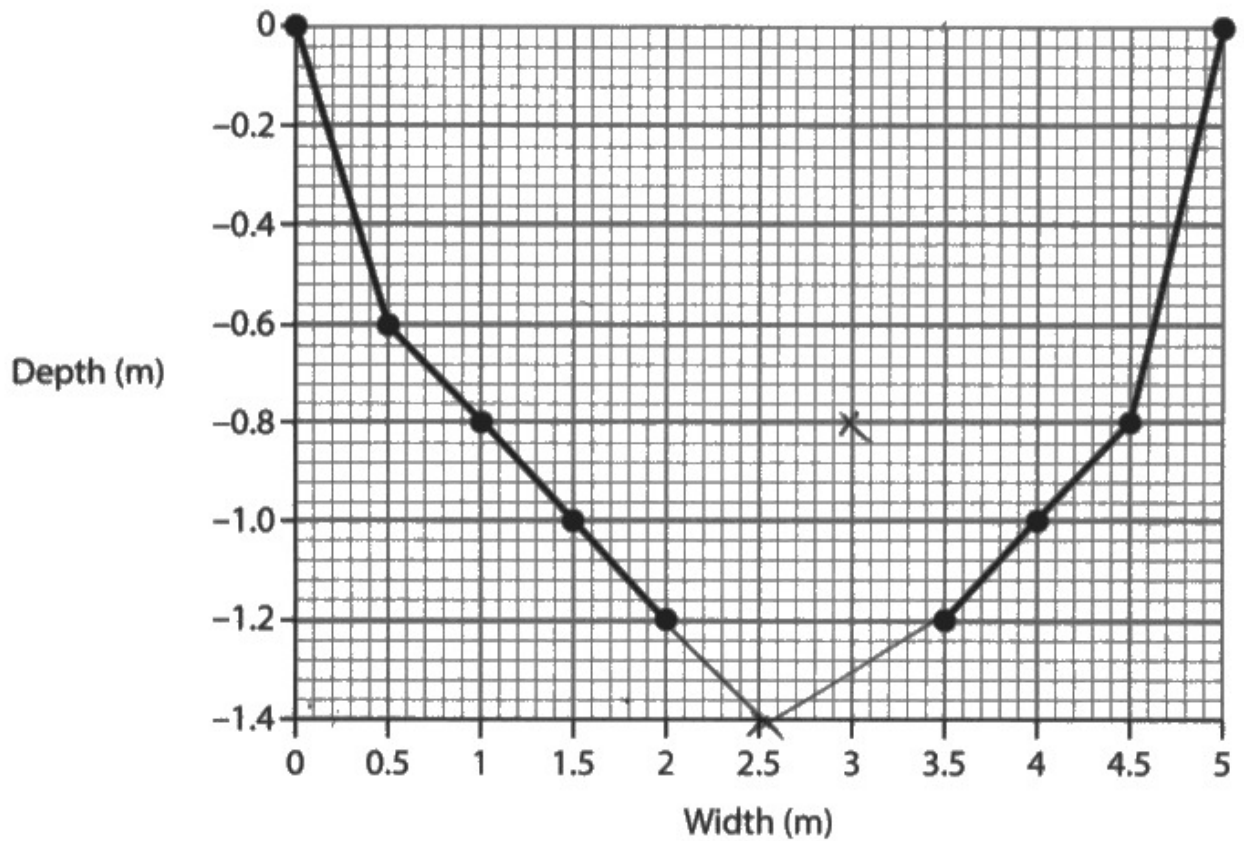


Figure 4d

River channel cross-section



1 mark – two correct data plots, but correctly drawn line.

Question 4 (c)(ii)

Q04(c)(ii), Q05(c)(ii) and Q06(c)(ii) were the same across each option. The candidates were required to explain one advantage of using a line graph to present results.

In this question, candidates are required to focus on one idea and develop it in detail to access the 3 marks available. A number of candidates described what the graph showed rather than explaining its usefulness. Candidates also struggled to develop one idea often giving three different advantages or giving the same advantage expressed in three different ways, often linked to how it was easy to visualise a pattern. The best responses were able to explain how line graphs show trends and anomalies which helps to confirm hypothesis.

(ii) Explain **one** advantage of using a line graph to present results.

(3)

So that trends are clearly shown, easier to identify anomalies i.e. when width is 3, the anomalous result of depth is ^{-0.8}. line graph also shows continuous data, makes it easy to evaluate and analyse data in order to study characteristics of a river along its course.



One advantage explained fully to gain all 3 marks – 'trends, anomalies, makes it easy to analyse and evaluate'.

(ii) Explain **one** advantage of using a line graph to present results.

(3)

Line graphs are useful for data presentation as they are clear and easy to read. Plotting quantitative data on a line graph helps identify trends or patterns in data collection results as well as help identify any anomalies or inaccuracies in the data collected.



3 marks – one well explained advantage – 'clear and easy to read, allowing trends and anomalies to be identified'.

Question 5 (a)(ii)

For this question, candidates needed to name a piece of equipment that would be plausible for the investigation described in the exam paper. There was no credit awarded for basic stationery 'pen/pencil or paper' as the candidates needed to name equipment specific to a geographical enquiry. Ruler was credited in Q04, Q05, and Q06, as it is specific to measuring pebbles or amount of rainfall.

This question was answered well and most candidates were awarded the mark.

(ii) Name **one** piece of equipment the students could have used in their enquiry.

(1)

ruler



ResultsPlus
Examiner Comments

Correct piece of equipment for measuring pebbles.

1 mark

(ii) Name **one** piece of equipment the students could have used in their enquiry.

(1)

Clinometer



ResultsPlus
Examiner Comments

Correct piece of equipment for measuring beach gradient.

1 mark

Question 5 (b)(i)

Q04(b)(i), Q05(b)(i) and Q06(b)(i) were the same across each option. This question 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.

(b) Study Figure 5b which shows some data about beach characteristics at four sites where data was collected.

(i) Calculate the mean pebble size at Site 2.

Give your answer to one decimal place.

You must show all your workings in the space below.

(2)

$$25 + 20 + 22 + 18 = 85$$

$$\frac{85}{4} = 21.25$$

21.25 mm
21



ResultsPlus
Examiner Comments

Correct working, but answer not shown to 1 decimal place.

1 mark

(b) Study Figure 5b which shows some data about beach characteristics at four sites where data was collected.

(i) Calculate the mean pebble size at Site 2.

Give your answer to one decimal place.

You must show all your workings in the space below.

$$25 + 20 + 22 + 18 = 85$$

$$85 \div 4 = 21.25$$

$$= 21.3$$

(2)

21.3 mm



ResultsPlus
Examiner Comments

Correct working and answer to 1 decimal place.

2 marks

Question 5 (b)(ii)

Q04(b)(ii), Q05(b)(ii) and Q06(b)(ii) were the same across each option.

This question was answered well with the vast majority of candidates able to identify a sampling strategy.

(ii) State **one** type of sampling students could have used to choose their data collection sites.

(1)

Systematic sampling



Correct sampling strategy.

1 mark

Question 5 (b)(iii)

Q04(b)(iii), Q05(b)(iii) and Q06(b)(iii) were the same across each option. Most candidates were able to identify the large range shown in the resource and suggest a reason for this occurring either specific to the investigation described or, more generically, linking to the idea of human error or an anomaly.

Question 5 (c)(i)

Q04(c)(i), Q05(c)(i) and Q06(c)(i) were the same across each option.

Candidates were awarded one mark for one correctly plotted data point and the second mark for plotting both data points correctly and connecting the plots with a line. Two correct plots without a line connecting them were limited to one mark. The vast majority of candidates were awarded the full two marks for this question.

- (c) (i) Complete the beach profile in Figure 5d below using data highlighted in Figure 5c in the Resource Booklet.

(2)

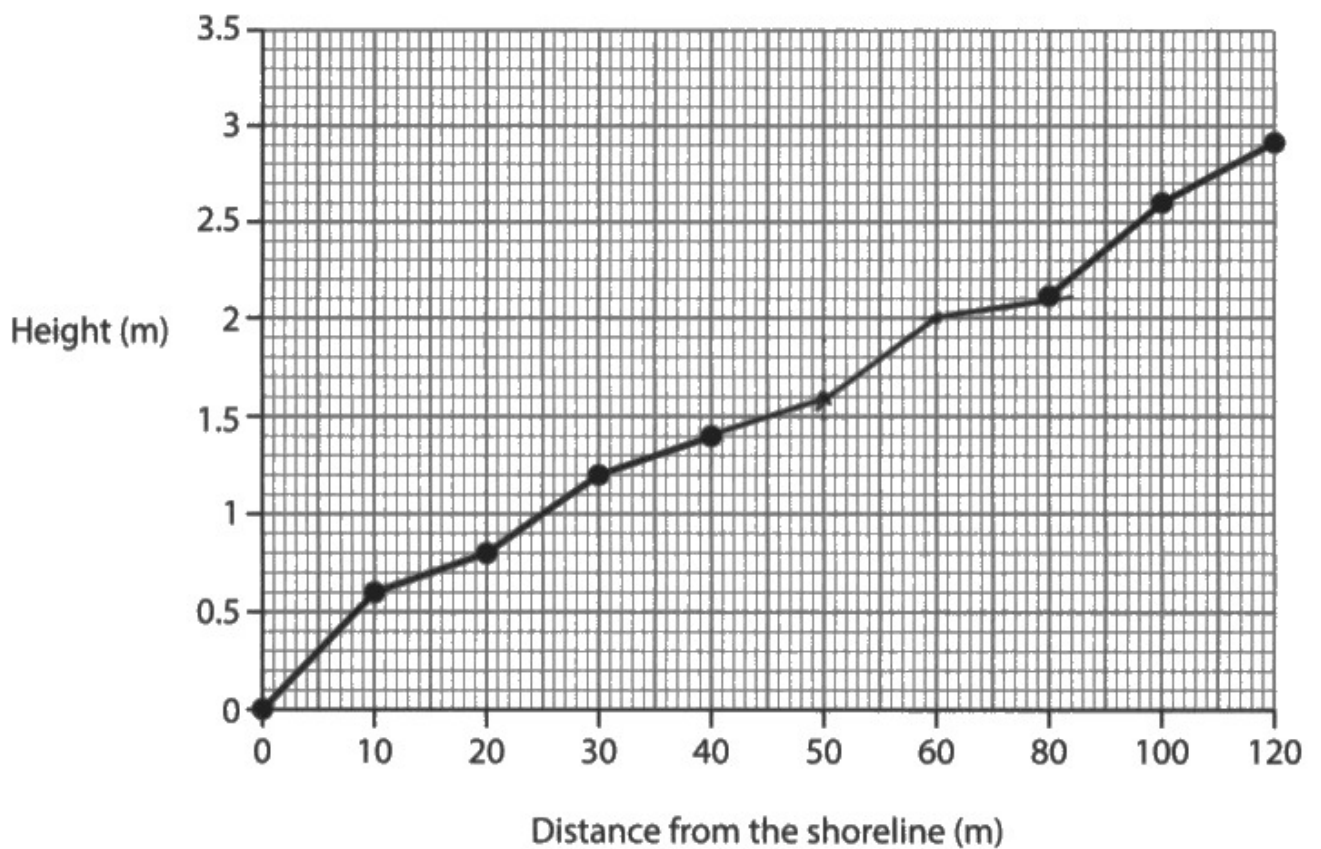


Figure 5d

Beach profile



ResultsPlus
Examiner Comments

Correctly plotted points, connected with a line.

2 marks

Question 5 (c)(ii)

Q04(c)(ii), Q05(c)(ii) and Q06(c)(ii) were the same across each option. The candidates were required to explain one advantage of using a line graph to present results.

In this question, candidates are required to focus on one idea and develop it in detail to access the 3 marks available. A number of candidates described what the graph showed rather than explaining its usefulness. Candidates also struggled to develop one idea often giving three different advantages or giving the same advantage expressed in three different ways, often linked to how it was easy to visualise a pattern. The best responses were able to explain how line graphs show trends and anomalies which helps to confirm hypothesis.

Question 6 (a)(ii)

For this question, candidates needed to name a piece of equipment that would be plausible for the investigation described in the exam paper. There was no credit awarded for basic stationery 'pen/pencil or paper' as the candidates needed to name equipment specific to a geographical enquiry. Ruler was credited in Q04, Q05, and Q06, as it is specific to measuring pebbles or amount of rainfall.

This question was answered well and most candidates were awarded the mark.

(ii) Name **one** piece of equipment the students could have used in their enquiry.

(1)

thermometre



ResultsPlus
Examiner Comments

Correct piece of equipment for measuring temperature.

1 mark

(ii) Name **one** piece of equipment the students could have used in their enquiry.

(1)

paper, pencil



ResultsPlus
Examiner Comments

Not specific to the geographical enquiry described.

0 marks

Question 6 (b)(i)

Q04(b)(i), Q05(b)(i) and Q06(b)(i) were the same across each option. This question 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.

(b) Study Figure 6b which shows some data on wind speed at four sites where data was collected.

(i) Calculate the mean wind speed collected at Site 2.

Give your answer to one decimal place.

You must show all your workings in the space below.

(2)

$$\frac{8 + 6 + 7 + 8}{4} = 7.25$$
$$= 7.3$$

..... 7.3 mph



Correct working and answer to 1 decimal place.

2 marks

(b) Study Figure 6b which shows some data on wind speed at four sites where data was collected.

(i) Calculate the mean wind speed collected at Site 2.

Give your answer to one decimal place.

You must show all your workings in the space below.

(2)

$$\frac{29}{4} = 7.25$$

..... mph



ResultsPlus
Examiner Comments

Correct working, but answer not shown to 1 decimal place.

1 mark

Question 6 (b)(ii)

Q04(b)(ii), Q05(b)(ii) and Q06(b)(ii) were the same across each option. This question was answered well with the vast majority of candidates able to identify a sampling strategy.

(ii) State **one** type of sampling students could have used to choose their data collection sites.

(1)

Survey Sampling



Not a sampling strategy.

0 marks

(ii) State **one** type of sampling students could have used to choose their data collection sites.

(1)

Random Sampling



Correct sampling strategy.

1 mark

Question 6 (b)(iii)

Q04(b)(iii), Q05(b)(iii) and Q06(b)(iii) were the same across each option. Most candidates were able to identify the large range shown in the resource and suggest a reason for this occurring either specific to the investigation described or, more generically, linking to the idea of human error or an anomaly.

Question 6 (c)(i)

Q04(c)(i), Q05(c)(i) and Q06(c)(i) were the same across each option. Candidates were awarded one mark for one correctly plotted data point and the second mark for plotting both data points correctly and connecting the plots with a line. Two correct plots without a line connecting them were limited to one mark. The vast majority of candidates were awarded the full two marks for this question.

(c) (i) Complete Figure 6d below using data highlighted in Figure 6c in the Resource Booklet.

(2)

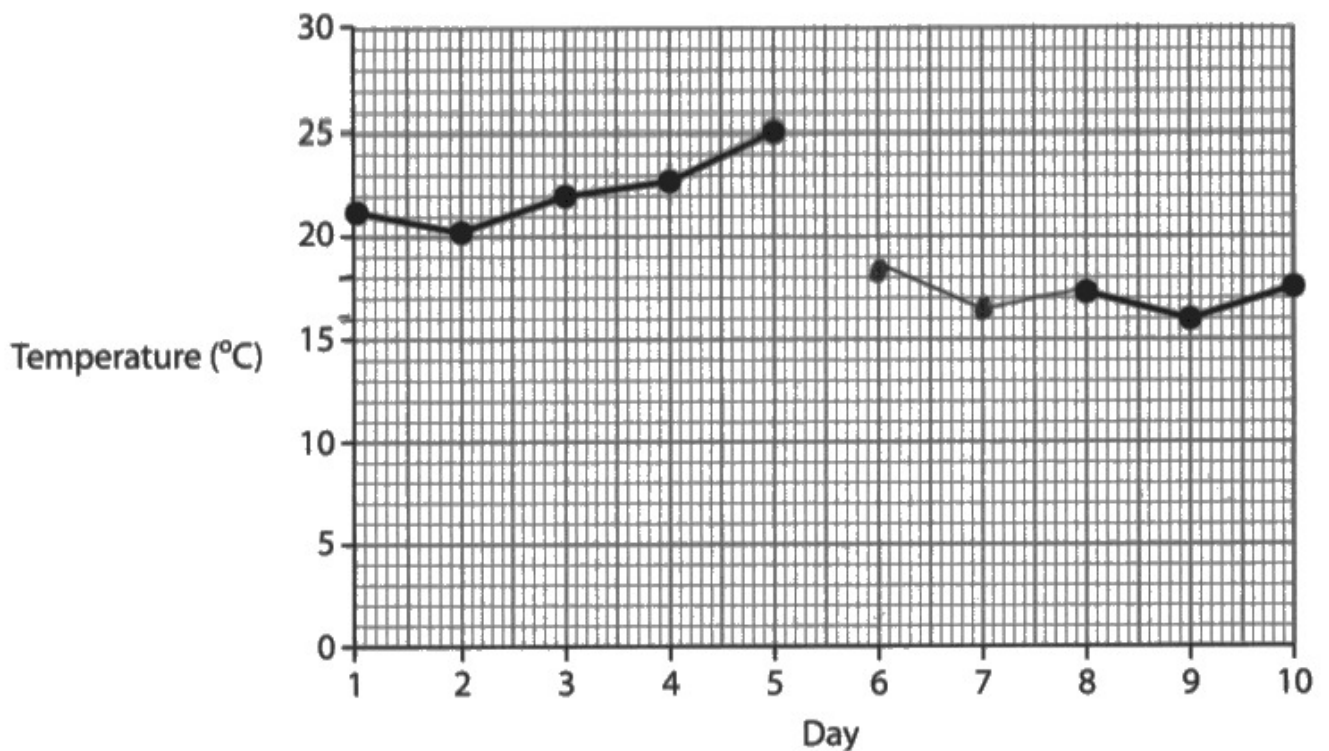


Figure 6d

Daily temperature



ResultsPlus
Examiner Comments

Two correctly plotted data points, but not correctly connected by a line.

1 mark

(c) (i) Complete Figure 6d below using data highlighted in Figure 6c in the Resource Booklet.

(2)

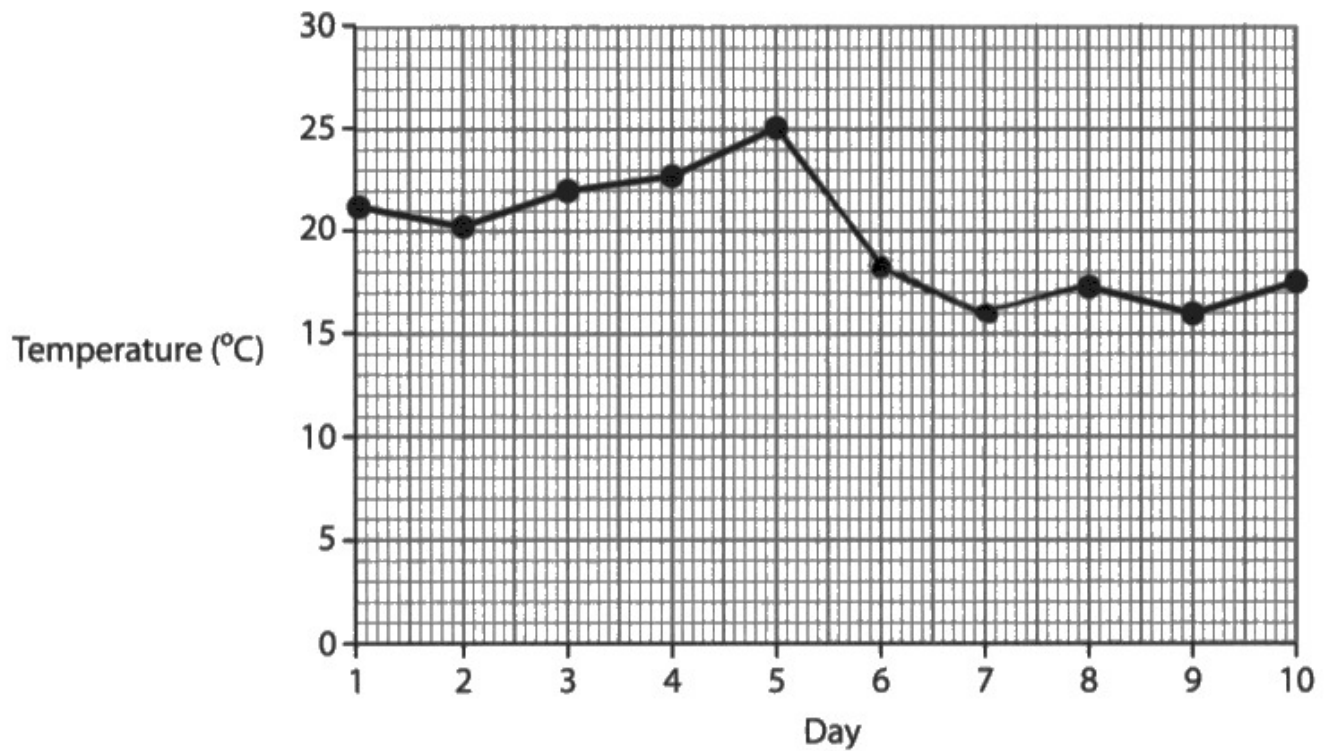


Figure 6d
Daily temperature



Correctly plotted points, connected with a line.

2 marks

Question 6 (c)(ii)

Q04(c)(ii), Q05(c)(ii) and Q06(c)(ii) were the same across each option. The candidates were required to explain one advantage of using a line graph to present results.

In this question candidates are required to focus on one idea and develop it in detail to access the 3 marks available. A number of candidates described what the graph showed rather than explaining its usefulness. Candidates also struggled to develop one idea often giving three different advantages or giving the same advantage expressed in three different ways, often linked to how it was easy to visualise a pattern. The best responses were able to explain how line graphs show trends and anomalies which helps to confirm hypothesis.

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.
- 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.
- 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 follow requirements for calculation questions accurately, particularly where they are asked to round an answer to one decimal place.
- It is important that candidates are aware of the difference between reliability and accuracy in the context of a geographical enquiry.
- Candidates need to be familiar with the advantages and disadvantages of using different data 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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