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June 2011

GCSE Geography 5GB1H 01

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June 2011

Publications Code UG028024

Introduction

This report covers responses from the Higher tier paper of GCSE Geography Specification B. The unit one paper is one hour long. The paper comprises of four compulsory sections and two optional units. Each section starts with a resource based activity, followed by one or two extending questions. The question paper has been designed to be progressively more difficult.

The aim of the unit/paper is to provide candidates with a broad and varied understanding of the natural environment. Question paper completion will require candidates to apply a range of skills. Candidates will need to be able to interpret and read maps, diagrams and charts.

The general level of response on this paper was of a high standard. Most candidates demonstrated a clear understanding of the foundations of each topic and many were able to write with focus and in depth. more knowledgeable cohort.

Candidates have the choice of answering either sections 5 or 6 and 7 or 8. As with past papers, the 'Coastal Change and Conflict' topic proved most popular in section B. In contrast to previous series, 'Marine Environments' attracted the most the candidates in section C, this was probably a reflection of the content on paper 3. The breakdown in both cases was approximately one third, two thirds.

Candidates completing the 'Extreme Climate' topic are given the choice of focusing on either a hot arid or arctic region. Hot arid locations, in particular Australia, was again most popular but didn't necessarily provide the best answers. Candidates studying polar landscapes were often able to provide responses of equal quality, particularly on the adaptation question.

Question 1 (a)

Most candidates were able to produced strong responses to this question. The most common answers referred to the strength of the earthquake, the creation of a tsunami or the lack of development in the affected countries. Some candidates lost marks by making vague/generic statements.

SECTION A – INTRODUCTION TO THE DYNAMIC PLANET

Answer ALL questions.

Topic 1: Restless Earth

1 Study Figure 1.

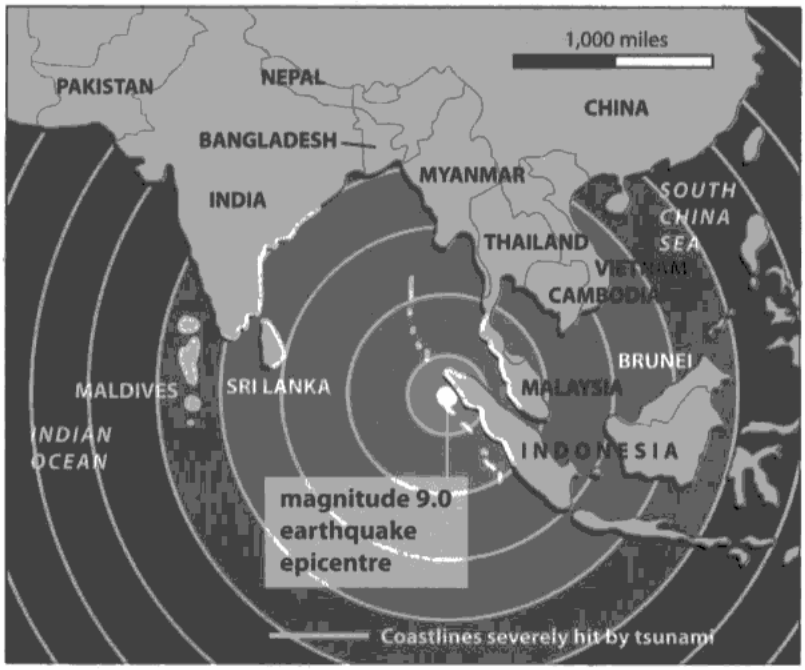

Figure 1 – Countries affected by the Boxing Day earthquake of 2004

(a) State **two** reasons why the Boxing Day earthquake had a severe effect on the countries in the region.

(2)

1 magnitude was 9.0

2 close to these countries

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Examiner Comments

Candidate scores a point for identifying the strength of the earthquake (ie magnitude 9.0), but failed to gain full marks as their second statement is far too vague - many of the countries affected were over 1000 miles from the epicentre.

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Examiner Tip

Always try to make maximum use of the response. On a map based question try to include named locations in your answer and if applicable refer to scale and direction.

(a) State **two** reasons why the Boxing Day earthquake had a severe effect on the countries in the region. (2)

1 ~~Surrounded by earthquakes~~ surrounding countries such as Thailand, Vietnam, Cambodia + Malaysia are all very close together so *

2 the surrounding countries are LEDC's so there would not be alot of preperation or enough money to cope with the hazard immediatly.

* they would all be effected meaning they coulant help are anotner out.

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Examiner Comments

This is a strong response. The candidate makes two clearly explained reasons.

Question 1 (b)

Overall, this question was answered well by most candidates. Almost all were able to identify an appropriate preparation strategy. However, a significant minority dropped marks for either stating two (rather than describing one) or by suggesting responses rather than preparations. A preparation happens prior to the eruption, a response after. The most common correct response referred to drills or evacuation plans.

(b) Describe **one** way in which a region affected by volcanic eruptions can prepare for this hazard.

(2)

A region can monitor the volcano and evaluate a selected area to when an eruption is found. An example of this is in india.

ResultsPlus
Examiner Comments

This candidate has failed to score maximum marks as they have identified one way of preparing (ie monitoring the volcano) and one response (ie evacuate). If the candidate had clearly stated that the evacuation should occur prior to the eruption, when warnings signs had been detected, then the second mark could have been awarded.

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Examiner Tip

Read questions carefully before putting pen to paper. Look for command terms and key words to ensure your answer is correctly focused and structured.

Question 1 (c)

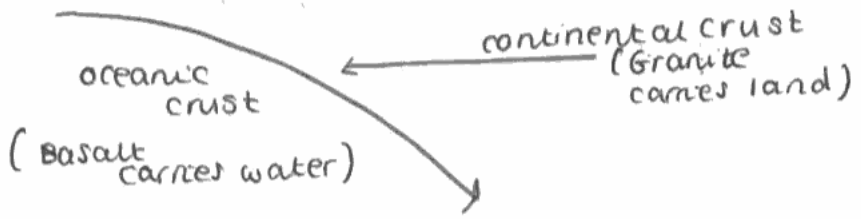
A lot of candidates scored highly on this question; however, the quality of diagrams was variable with candidates losing marks for failing to label/annotate important features. Candidates who opted to explain how volcanoes form on destructive boundaries tended to provide more detailed/high scoring responses. A significant minority of candidates lost marks by mixing up the different boundaries.

(c) Explain how volcanoes are formed on **either** constructive **or** destructive plate boundaries.

You may draw a diagram to help you.

(4)

Chosen type of plate boundary Destructive



volcanoes are formed as the dense oceanic crust is subducted below the continental crust. volcanoes which is very viscous have andesitic lava^ and are very explosive. An a composite volcano example of this is Mt St Helens^ which was formed on a destructive plate boundary and was the greatest landslide every recorded. The subduction of the oceanic plate caused a huge amount of pressure along the fault and pyroclastic flows are common and devastate the surrounding

(Total for Question 1 = 8 marks)

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Examiner Comments

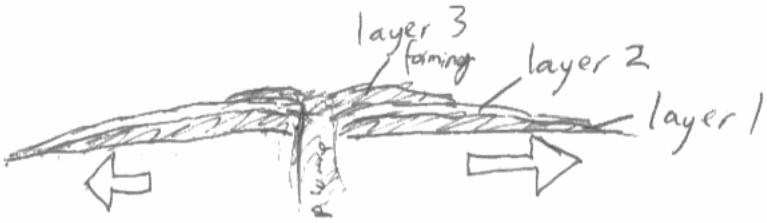
A considerable part of the candidate's response is off focus. As the question asked about the formation of volcanoes, details on the eruption of Mt St Helens or the nature of different types of eruption failed to gain marks. Diagram is basic.

(c) Explain how volcanoes are formed on **either** constructive **or** destructive plate boundaries.

You may draw a diagram to help you.

(4)

Chosen type of plate boundary constructive



As the plates pull apart a plume of magma rises to the surface to fill the gap. On constructive plate margins this tends to be basaltic lava so flows easily away from the boundary before solidifying. When more lava rises to the surface this creates another layer of rock on top of the ~~on~~first layer. This continues building up the volcano to be ~~stella~~ large with shallow sides.

ResultsPlus
Examiner Comments

A well developed answer. Candidate has clearly structured the response, providing each step in the correct order. Candidate demonstrates a solid understanding of the subject matter by including a good range of subject specific terminology.

ResultsPlus
Examiner Tip

When given the opportunity to support your answer with a diagram, it is often possible to score full marks by producing a clearly drawn and annotated sketch. Many candidates lose marks by including features in their diagram but failing to label or refer to them in their accompanying written description.

Question 2 (a) A

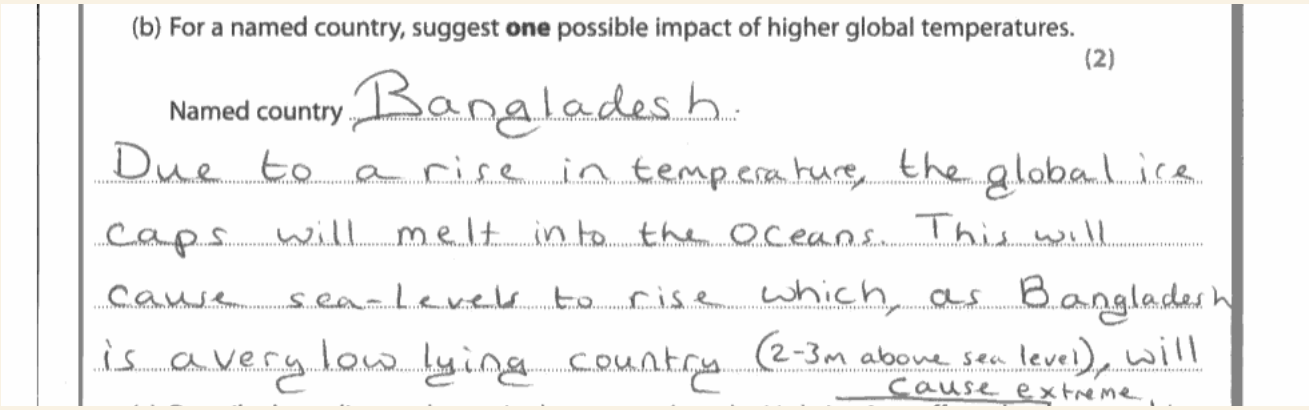
The vast majority of candidates correctly identified the greenhouse gas.

Question 2 (a) D

The vast majority of candidates correctly identified the greenhouse house. However, a significant minority lost marks by failing to distinguish between carbon dioxide from fossil fuels and carbon dioxide from deforestation.

Question 2 (b)

The majority of candidates scored both marks on this question. The UK, Egypt and Bangladesh were the focus of most responses. Rising sea level resulting in coastal flooding was the most common correct response. A significant minority of candidates lost by writing a response that did not relate to their chosen country or by selecting a continent as their focus. Other candidates mixed up their topics, with a sizeable number referring to the factors that make life in an extreme climate difficult.



(b) For a named country, suggest **one** possible impact of higher global temperatures.

(2)

Named country Bangladesh.

Due to a rise in temperature, the global ice caps will melt into the oceans. This will cause sea-level to rise which, as Bangladesh is a very low lying country (2-3m above sea level), will cause extreme

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Examiner Comments

This response scored maximum marks. The candidate identifies the impact of rising sea levels from melting ice caps and links this to flooding. The response is clearly focused on the candidates chosen country.

ResultsPlus
Examiner Tip

The number of points a question is worth can give you important information about what the examiner will be looking for when marking your answer. In this case the question asks you to 'suggest one' but there are two marks available, therefore we know that an extended response is needed for maximum marks.

(b) For a named country, suggest **one** possible impact of higher global temperatures.

(2)

Named country United Kingdom.

higher temperatures in the UK would mean that farmers ~~land would eh~~ would have to change their produce. this would ~~disturb~~ the type of crops the would grow. have a change.

ResultsPlus
Examiner Comments

This candidate only scored one mark as the first and second statements are basically the same.

ResultsPlus
Examiner Tip

If you have time left at the end of the exam, always read through your answers and look out for careless errors. Repetitive statements are common even on higher tier.

Question 2 (c)

There were some excellent answers to this question. In comparison with previous 'past climate change' questions, answers were more focused and detailed. Candidates identified a wide range of impacts and in most cases were able to provide some clear description. A small number of candidates lost marks by referring to future climate change or current causes of climate change rather than answering the question. As the question referred to 'climate change in the past', candidates were free to discuss any period of climate change, such as the little ice age or the medieval warm period.

(c) Describe how climate change in the past, such as the Little Ice Age, affected people and ecosystems.

(4)

Little Ice Age in Britain meant that many ecosystems died as the animals could not adapt quickly enough to the cold temperatures. Better suited animals such as reindeer and the woolly mamoth took their place. farmers crops couldn't adapt to the cold temperatures and lack of sunlight made it hard for the ones that could to grow. Arctic shrubs were very common. for the people, the river Thames completely froze over which allowed them to ice skate on the river and have ice fairs. Temperatures would have to be very cold to freeze running water such as the thames so people would've found it hard to keep warm in the winter.

(Total for Question 2 = 8 marks)

ResultsPlus
Examiner Comments

This is a strong response referring to both people and ecosystems.

ResultsPlus
Examiner Tip

Watch out for questions which include two factors, eg people and ecosystems. To score maximum marks you must refer to both in your response. Some of the most detailed responses failed to gain maximum marks as they only focused on people or ecosystems.

(c) Describe how climate change in the past, such as the Little Ice Age, affected people and ecosystems.

(4)

People became more self dependant and ~~were~~ had a much harder way of life. They had to find food and shelter to stay alive and they were forced to adapt to extreme temperatures.

ResultsPlus
Examiner Comments

A number of vague statements, ie "had to find food and shelter to stay alive"; this is always true and does not just relate to periods of climate change. No reference to ecosystem impacts.

ResultsPlus
Examiner Tip

The amount of lines available should be used to help you judge the level of detail needed. Each point is usually given two lines.

Question 3 (a)

Almost all candidates scored on this question but a significant minority failed to gain both marks. A considerable number made the classic error of explaining rather than describing the changes. A relatively large number of candidates were unable to make accurate compass point references with east and west being frequently mixed up. Other candidates struggled to locate specific regions making vague statements such as 'the top bit'.

Topic 3: Battle for the Biosphere

3 Study Figure 3.

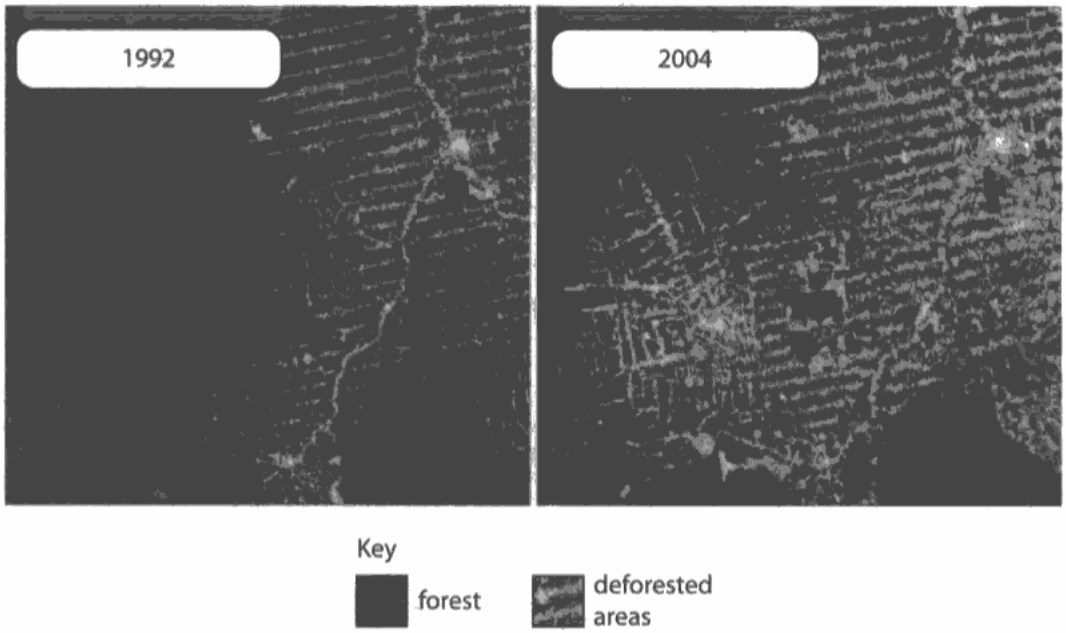

Figure 3 – Satellite images showing deforestation in Rondonia, Brazil

(a) Describe the change in deforested areas between 1992 and 2004.

(2)

The amount of ~~this~~ deforestation since 1992 to 2004 has increased as our demand for materials has also increased.

ResultsPlus
Examiner Comments

Candidate only scores 1 mark as the second statement explains rather than describes the change in deforestation.

(a) Describe the change in deforested areas between 1992 and 2004.

(2)

The existing ~~area of~~ deforested area in 1992 has become more severely deforested over the twelve years and ~~the area to the left of the shot has~~ the deforested area has spread into the left side of the shot which was untouched in 1992.

ResultsPlus
Examiner Comments

Maximum points awarded as the candidate identifies two changes: more intense deforestation in existing areas and deforestation spreading to new areas.

ResultsPlus
Examiner Tip

When describing a map it is often useful to use compass directions to help identify specific locations.

Question 3 (b)

Many candidates failed to score maximum marks on this question. Weak responses generally included vague statements about re-planting trees but failed to identify the management measure which would be used to ensure that this was achieved, ie new legislation or the introduction of forest wardens. The best answers tended to relate to the creation of national parks/reserves or the introduction of eco-tourism.

(b) Describe **one** management measure that can be used to conserve the biosphere.

(2)

They could use Eco-tourism, and make the rainforest a national ~~people~~ park, this will stop people cutting trees down and conserving the rainforest by banning deforestation in some areas.

ResultsPlus
Examiner Comments

This is a clear response which scored both marks. Candidate identifies the creation of national parks as a management measure and explains that these ban deforestation.

(b) Describe **one** management measure that can be used to conserve the biosphere.

(2)

Stop cutting down trees and using the area for settlement or, logging or ranching, ever time a tree is cut down they are making an animals home disapear.

ResultsPlus
Examiner Comments

Candidate scores a mark for stating that 'cutting down trees must stop' but does not get the second point as they do not suggest how this can be achieved.

ResultsPlus
Examiner Tip

As this is a 'describe one' question, candidates are required to provide some detail on a single measure. Listing several potential measures but with no extension will fail to gain maximum marks.

Question 3c

This question proved challenging for most candidates. A significant minority did not seem to understand the term biome. There was considerable confusion over where different biomes are found with deserts most commonly located along the equator. A significant number of candidates felt that there was a direct correlation between temperature and rainfall, claiming that hot places are dry and cold places wet. This confusion lead to a number of conflicting statements such as 'the equator is the hottest and therefore driest place on the planet; this is where the tropical rainforest is found'. Some students provided excellent explanations of why different regions have different climates but unfortunately did not link these changes to biomes.

(c) Explain how temperature and precipitation affect the distribution of global biomes.

(4)

some biomes have very hot temperature like for example 'Hot Desert' but precipitation is different as somewhere might have a very warm temperature and not a lot of precipitation. Whereas another place may have very warm temperature and lots of precipitation therefore there is a difference between them. This may affect the distribution because of the differences. Other factors that affect the distribution of global biomes are continentality, latitude, aspect & altitude.

(Total for Question 3 = 8 marks)

ResultsPlus
Examiner Comments

This response gets 1 mark for general understanding that precipitation and temperatures affect biome type; and 1 mark for identifying a number of influencing factors. A lack of explanation prevents a higher score.

ResultsPlus
Examiner Tip

'Explain' questions are usually amongst the most demanding on any exam paper. Candidates often lose marks by describing rather than explaining. To make sure your answer includes some explanation, try to include the statement 'this is because...' in your response.

Question 4 (a)

Almost all candidates scored both marks on this question. A small number dropped points by failing to focus their answer on South America, resulting in irrelevant statements about Africa and Australia.

Topic 4: Water World

4 Study Figure 4.

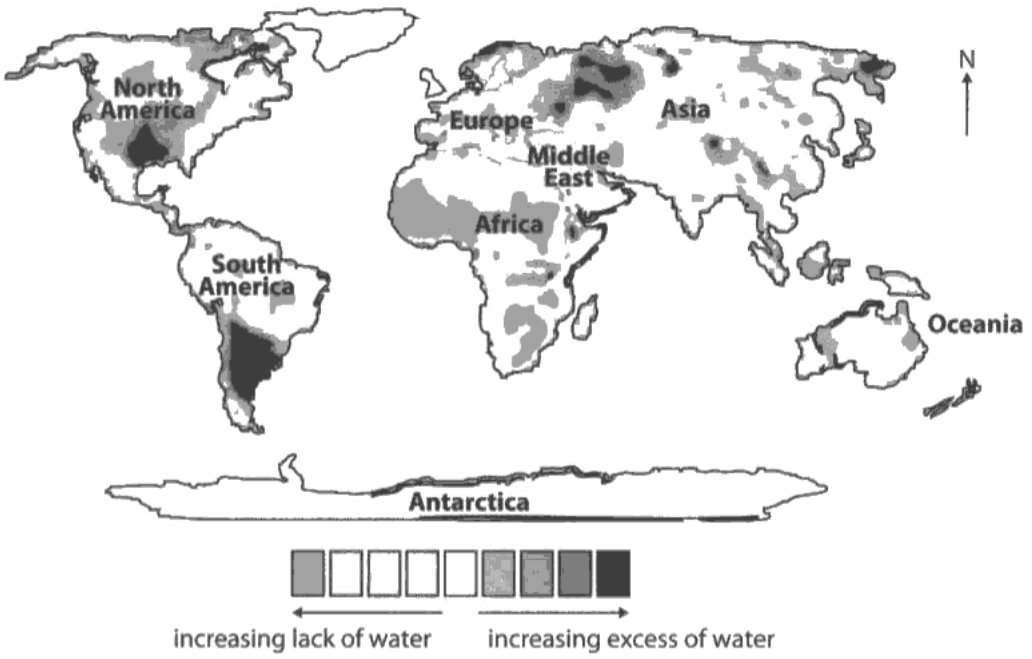

Figure 4 – A global water availability map

(a) Describe the pattern of water availability in South America.

(2)

As you move South in South America the amount of available water generally increases. Particularly in Brazil there is a lack of water in the north but an excess in the south

ResultsPlus
Examiner Comments

This is a strong response that identifies general pattern and shows good location knowledge.

Question 4 (b)

Candidates were required to focus their answer on a specific water management project. Some candidates lost marks by confusing topics with several referring to flood management schemes and coastal engineering projects. Large scale schemes tended to produce the strongest answers. Candidates who chose to focus on small scale projects often wrote responses that failed to answer the question, ie listing the sustainable features of the pumpkin tank or describing how it is made rather than identifying the benefits it brings to local people.

(b) For a named water management project, describe ways it has benefited local people.

(2)

Named water management project: Colorado River Scheme

It has benefitted lots of states, including Arizona which was nearly water-depleted. But now because of this scheme it has enough water for people to live their and to be sustainable.

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Examiner Comments

Candidate scores a mark for 'it has enough water for people' but failed to gain both points as the rest of the response is either off focus or too vague.

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Examiner Tip

Whenever you include the term 'sustainable' in an answer it is good practice to explain what you mean. The term today has many different meanings, including long lasting, eco-friendly, and profit making. To ensure your answer is understood in the correct context, you should always add an extending statement to clarify how you are using the word.

(b) For a named water management project, describe ways it has benefited local people.

(2)

Named water management project: Colorado Hoover Dam

The colorado Hover dam helps to regulate water supply to local people this helps ensure a regular supply all year raund. Also helps to stop floods and droughts smoothing out peaks in supplies. This ensures water is always availible.

ResultsPlus
Examiner Comments

This answer clearly identifies two benefits.

Question 4 (c)

Although most candidates identified evaporation and were able to offer some extension, few highlighted transpiration and even less were able to provide any explanation of the process. Most candidates wasted time and space by describing the entire water cycle. A significant number of candidates went off focus describing the different ways water is transferred from the land to the sea.

(c) Explain how water is transferred from the land to the atmosphere in the hydrological cycle.

(4)

Water is absorbed by trees and runs through the ground to oceans, rivers and lakes where it evaporates into the atmosphere. The water vapour gathers and condences to form clouds. When the water droplets get too heavy for the cloud they fall as precipitation, then ground-runoff, and run-through return it too the rivers, oceans, lakes etc.

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Examiner Comments

Candidate identifies evaporation and acknowledges that this can happen from several sources, eg oceans, rivers and lakes. The rest of the response refers to parts of the water cycle not relevant to the question.

(c) Explain how water is transferred from the land to the atmosphere in the hydrological cycle.

(4)

As water falls from the atmosphere, it is stored in many places; such as in trees and on the surface. In increasingly hot conditions, the water evaporates from the leaves of trees and plants, this is called ~~evapo~~ evapotranspiration. This goes into the atmosphere. The surface run off also takes water to nearby rivers and seas, where such large amounts of water encourage evaporation into the atmosphere.

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Examiner Comments

This is a strong response; candidate identifies both evaporation and evapotranspiration. Candidate explains that heat is needed for evaporation to occur and highlights that evaporation can happen from several identified sources.

Question 5 (a) A

Almost all candidates correctly identified the wave process.

Question 5 (a) B

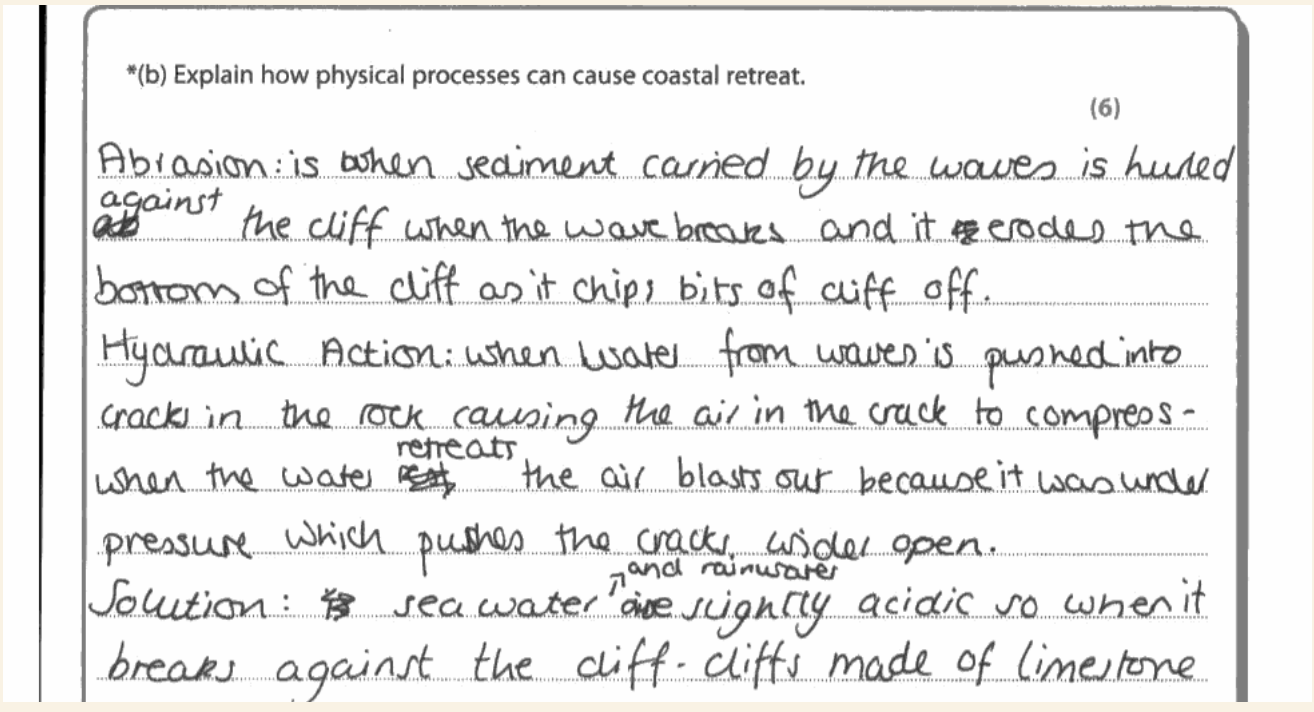
Almost all candidates correctly identified the wave process.

Question 5 (a) C

Question proved more challenging than parts 1 & 2. Common incorrect responses included 'wave' and 'fetch'.

Question 5 (b)

Almost all candidates were able to identify and describe at least one physical process. Some students lost marks by focusing on human rather than physical actions. A significant minority of candidates were unable to reach level 3 due to a lack of subject specific terminology. In numerous cases candidates were able to describe the processes of hydraulic action and abrasion but did not seem to know their names. Another common error was for candidates to explain a wide range of processes without actually linking them to coastal retreat.



*(b) Explain how physical processes can cause coastal retreat.

(6)

Abrasion: is when sediment carried by the waves is hurled against the cliff when the wave breaks and it erodes the bottom of the cliff as it chips bits of cliff off.

Hydraulic Action: when water from waves is pushed into cracks in the rock causing the air in the crack to compress - when the water retreats the air blasts out because it was under pressure which pushes the cracks wider open.

Solution: sea water and rainwater are slightly acidic so when it breaks against the cliff - cliffs made of limestone

for example will react with the acidic water and wear away.
These all push the coastline backwards because they damage the cliff until it wears away or breaks off.
An example of cliffs wearing away is the Holderness Coast of East Yorkshire.

(Total for Question 5 = 9 marks)

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Examiner Comments

This is a strong level 3 response. It is a detailed answer with clear explanations and good use of subject terminology. The candidate clearly links processes to coastline retreat through notch development and cliff collapse.

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Examiner Tip

The key to achieving a top score on a levelled response question is detail. Always aim to describe/explain a small number of points (normally 3 is enough) rather than listing a lot of factors with little development.

*(b) Explain how physical processes can cause coastal retreat.

(6)

Waves can force their power onto a cliff face and wear down the rock. The sea throws rocks and stones and the cliff face wearing it down. Rocks rub against each other and break each other up into smaller ~~pi~~ pieces

ResultsPlus
Examiner Comments

This response is only of level 1 standard. There is basic description of coastal erosion but no explanation. Poor English and little terminology.

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Examiner Tip

On levelled responses you are assessed on the quality of your written communication. You should take particular care on these questions with your spelling, punctuation and grammar. Make sure your response is clearly structured, is easy to understand and includes effective use of subject specific terms.

Question 6 (a) A

Almost all candidates correctly identified the river landform.

Question 6 (a) B

Almost all candidates correctly identified the river landform.

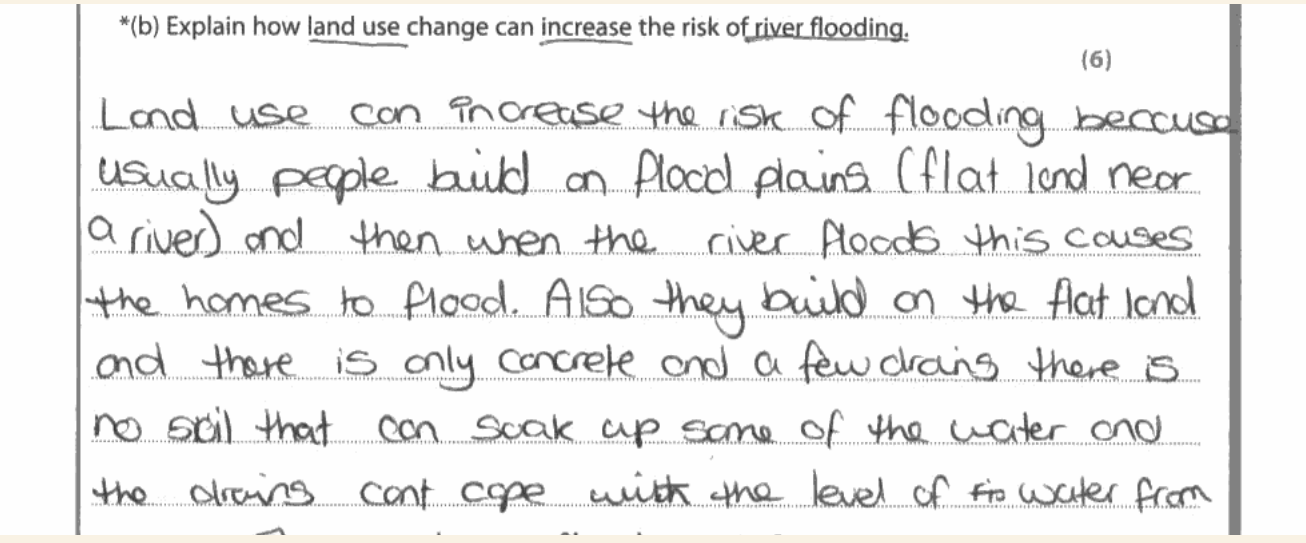
Question 6 (a) C

Question proved more challenging than parts 1 & 2. Incorrect responses varied widely from v-shaped valleys and floodplains to ox-bow lakes and deltas.

Question 6 (b)

Almost all candidates were able to describe the impact of at least one landuse change. Most successful responses focused on urbanisation and deforestation. Strong answers often included a wide range of subject specific terms. Some candidates clearly explained the impact of landuse change, but failed to gain a top level score, as no attempt was made to link these impacts to river's flood risk.

For example, some candidates stated that urbanisation results in increased impermeable surfaces which stop rainwater from being absorbed into the ground. However, they did not explain that this would lead to more surface runoff reaching the river, increasing discharge and potential flood risk. Some candidates mixed up river and coastal flooding, and other candidates went off focus discussing the impact of climate change and increased carbon dioxide emissions.



*(b) Explain how land use change can increase the risk of river flooding.

(6)

Land use can increase the risk of flooding because usually people build on flood plains (flat land near a river) and then when the river floods this causes the homes to flood. Also they build on the flat land and there is only concrete and a few drains there is no soil that can soak up some of the water and the drains cant cope with the level of the water from

a river. The ~~flood plains~~ flood plains are also used for farming because of the moist and damp soil but when it floods the ~~farmer~~ crops can't survive with that amount of water ~~of~~ so they die and the farmer can't ~~can't~~ plant more seeds until the grand is dry again, this can cause (if severe enough) Famine.

(Total for Question 6 = 9 marks)

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Examiner Comments

This is a level 2 response. Candidate briefly explains how building can result in an increase river discharge, and also identifies building on the floodplain as an issue. The answer lacks the sophistication needed for level 3.

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Examiner Tip

Try to include as many subject specific terms in your responses as possible. On levelled response questions an effective use of terminology is essential for a top level score.

*(b) Explain how land use change can increase the risk of river flooding.

(6)

There are many ways land use can increase the risk of a river flooding. If the levees of a river are removed or replaced, this can increase the chance of a river flooding. If the area around a river is built on, this can increase surface runoff and therefore increases the risk of a flood. If the river has been made smaller by flood defences and barriers, this means the river has less water capacity, meaning it could burst its banks a lot easier. The land around a river should be used for agriculture and livestock.

(Total for Question 6 = 9 marks)

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Examiner Comments

This is a level 3 response. Candidate identifies a number of land use changes and explains how they can increase flood risk. Answer includes a good range of terminology.

Question 7 (a)

Most candidates achieved strong scores on this question. Some candidates lost marks by including incorrect graph readings, while others explained the drop rather than describing it.

7 Study Figure 7.

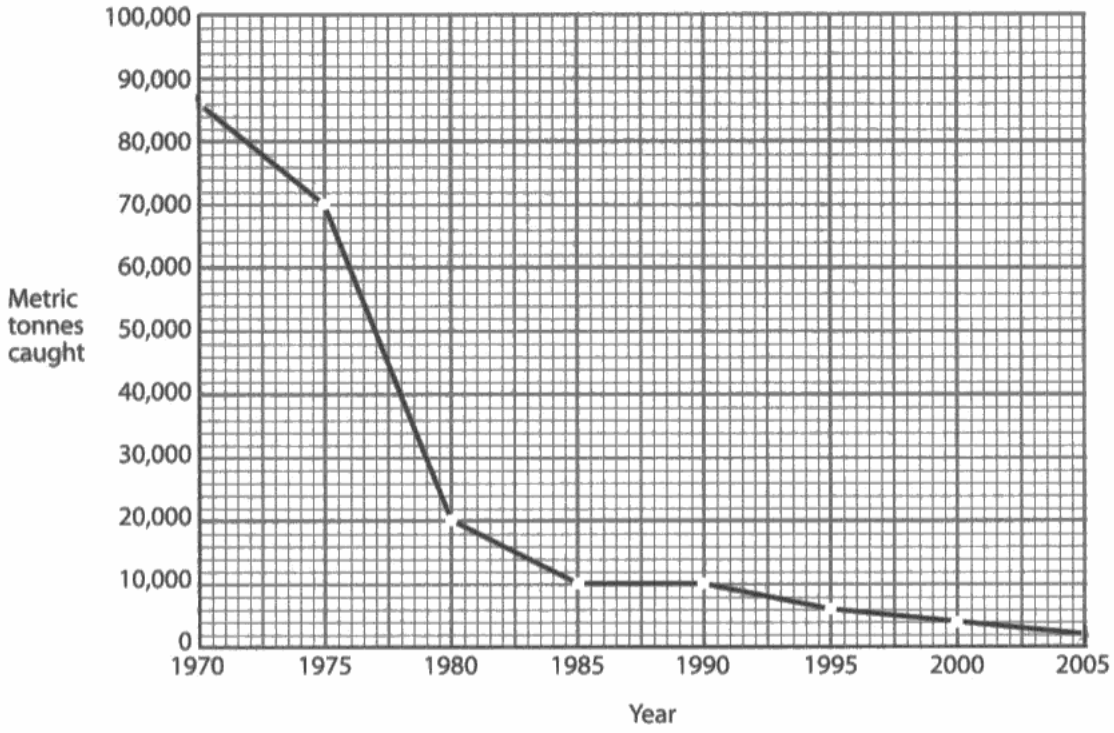

Figure 7 – Tonnes of bluefin tuna caught, 1970 to 2005

(a) Describe how the amount of bluefin tuna caught changed between 1970 and 2005.

(3)

From 1970 to 1985 there is a huge decline in the amount of bluefin tuna caught, then from 1985 - 1990 it remains constant then onwards to 2005 it gradually starts to decline again.

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Examiner Comments

This answer identifies three periods of different rates of change.

7 Study Figure 7.

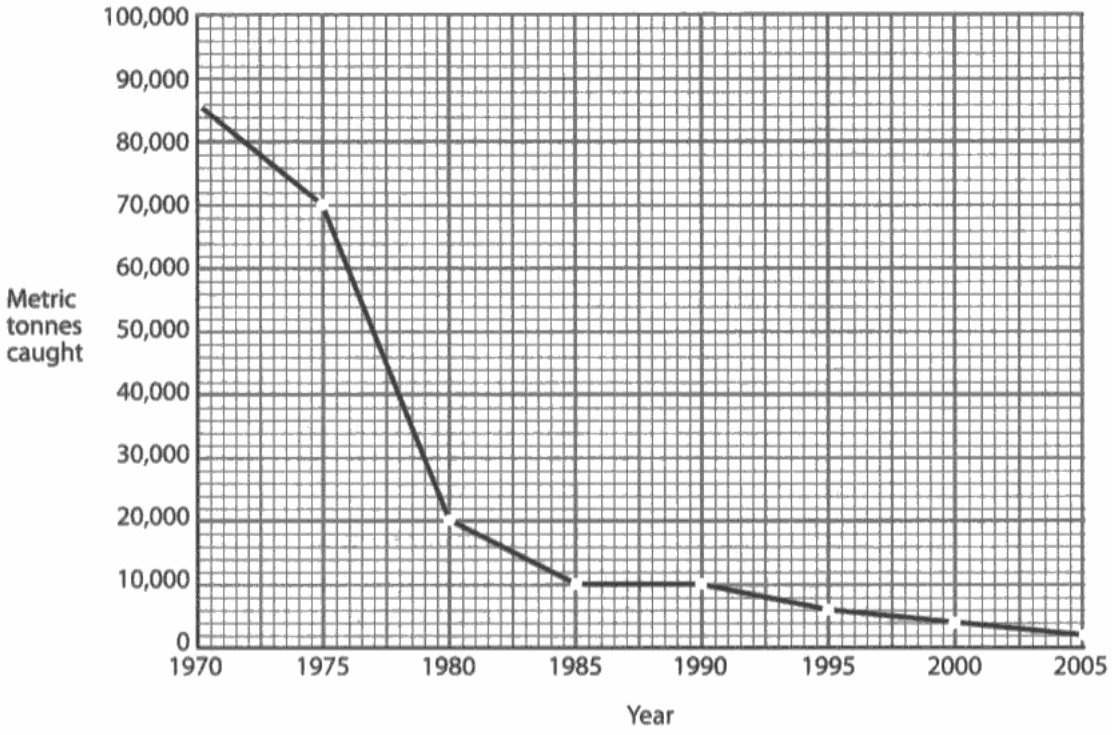

Figure 7 – Tonnes of bluefin tuna caught, 1970 to 2005

(a) Describe how the amount of bluefin tuna caught changed between 1970 and 2005.

(3)

The number of bluefin tuna fell ~~for~~ rapidly from 86,000 in 1970 to 10,000 in 1985. From then on it carried on falling at a much slower rate. In the 2005 it had fallen to 2,000 blue fin tuna.

ResultsPlus
Examiner Comments

This is a strong response. Candidate clearly describes the change in tuna catch and also supports statements with accurate graph readings.

Question 7 (b)

Most candidates produced detailed and informative answers to this question. The strong responses tended to focus on coral reef bleaching and habitat destruction. Most candidates reaching level 3 were able to link impacts of climate change to food chain/web collapse.

*(b) Explain how climate change might add additional stress to marine ecosystems.

(6)

Climate change could cause a number of changes to the oceans, not only in terms of rising levels of the water but also an increase in temperature, and acidity from the absorption of extra CO_2 in the atmosphere forming carbonic acid. The temperature increase will mean some organisms like plankton won't be able to reproduce as much so it's huge number of predators will suffer as a result. This will affect a wide number of food chains and webs and could have a drastic detrimental effect. Also, some organisms won't be able to cope with the rise in pH levels from the extra CO_2 and die out, again affecting the marine ecosystems hugely.

(Total for Question 7 = 9 marks)

ResultsPlus
Examiner Comments

This is a level 3 response. Candidate has produced a clear answer that explains the impact of rising temperatures and acidity on marine life and food chains.

*(b) Explain how climate change might add additional stress to marine ecosystems.

(6)

Increased CO_2 in the water causes coral reefs to become bleached and fish no longer can live there. The increased temperature of the water means some fish have to move habitates ~~en~~ or adapt. Some fish might not adapt quickly enough so these fish could become extinct.

ResultsPlus

Examiner Comments

This is a level 2 response. Candidate explains how the increased temperature can affect marine ecosystems. However, statements about bleaching and CO2 are confused.

Question 8 (a)

Most candidates achieved strong scores on this question. Some candidates lost marks by including incorrect graph readings while others attempted to explain the changes rather than describe them.

8 Study Figure 8.

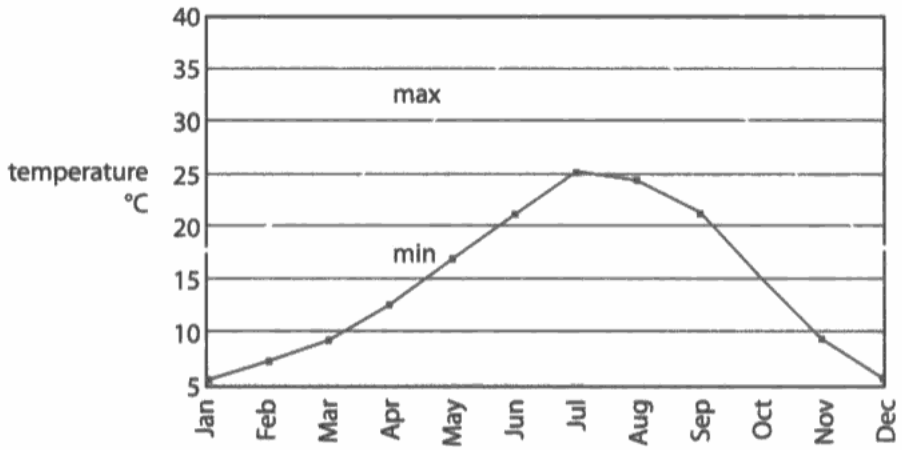

Figure 8 – Maximum and minimum temperature graph, Phoenix (Arizona, USA)

(a) Describe the pattern of the maximum and minimum temperatures.

(3)

During the beginning of the year, both the maximum and minimum temperatures are low. As the year moves on, they both increase until they reach a peak in July. After this the both decrease until they reach December which has the same minimum & maximum temperature as January. throughout the year, the difference between them stays relatively the same. The maximum temperature is 37 in July and the minimum temperature is 6 in January and December.

ResultsPlus
Examiner Comments

This response identifies peak and lows in temperature. It highlights that the difference in max/min stays roughly the same. Answer includes accurate graph readings.

Question 8 (b)

Candidates focusing on both polar and arid environments scored highly on this question. Candidates referred to a wide range of different types of vegetation. Most candidates were able to describe and explain at least 2 adaptations and were able to link these changes to the specific challenges of their environment.

*(b) For **either** a hot arid **or** a polar region, explain how vegetation has adapted to this extreme climate.

(6)

Hot arid or polar region: Sahel

The arid region recieves little water for most of the year round so little vegetation grows. However those that do have long stems to hold any water and have small or no leaves in order to conserve water. They have long roots near the surface to pick up any rainfall and deep into the earth for any in the ground. They can live for long periods of time without water.

ResultsPlus
Examiner Comments

Candidate identifies a number of adaptations, while some adaptations are only listed, others are briefly explained. To reach level 3 standard the candidate needed to link the adaptation more closely the demands of its environment.

*(b) For **either** a hot arid **or** a polar region, explain how vegetation has adapted to this extreme climate.

(6)

Hot arid or polar region: hot arid.

In the sonoran desert in Arizona it is incredibaly hot and dry. This lack of moisture forces the plants to adapt as otherwise they die. The giant saguaro cactus is perfectly adapted for these conditions. Its leaves have turned into thorns this means it loses less onto water via transpiration in its leaves. Also the wind doesnot suck as much water from the plant as the thorns trap a layer of air next to the plant. It has a thick tubular stem which contains water and the inside flesh is very moist and saturated providing water for the plant. The root system is very deep as the plant needs to reach as much water as possible. The greater surface area of roots allows for a greater absorption of water. The thorns also stop thirsty animals from breaking open the stem and drinking the sap, the stem is covered in a waxy layer to avoid water loss.

(Total for Question 8 = 9 marks)

TOTAL FOR SECTION C = 9 MARKS
TOTAL FOR PAPER = 50 MARKS

ResultsPlus
Examiner Comments

This is a level 3 response. It is a strong answer, both detailed and informative. It covers a range of adaptations, and explains how they benefit the plant.

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