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Examiners' Report
June 2019

GCSE Geography 1GA001

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Introduction

This was the second assessment of this paper and it was pleasing to see a good standard of responses from candidates.

There was evidence that many candidates were better prepared. This was particularly evident in some of the 8 mark questions where candidates were better able to address the command words (eg assess). However, the greater emphasis on application and interpretation is still proving a challenge for some candidates. It was also evident again this year that there were time management issues with some candidates not managing to complete all the questions.

The following report outlines candidates' performance on the paper, highlighting areas of strength and weakness across the different questions, offering examples of performance and suggestions for improvements in future series.

Question 1 (b)

Most candidates were able to identify a characteristic of a sedimentary rock. However, some candidates stated characteristics of igneous rocks (eg formed by cooling) or metamorphic rocks (eg formed by pressure) and were not awarded a mark.

(b) State **one** characteristic of a sedimentary rock.

(1)

hard

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Examiner Comments

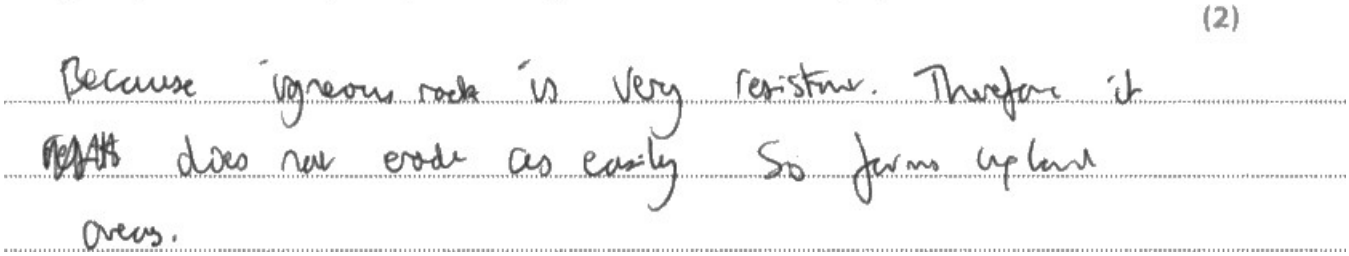
This candidate has referred to a valid characteristic.

Question 1 (c)

Candidates tended to approach this question from one of two ways. They either focused on the level of resistance of the rock or they approached it from the direction of igneous rocks being volcanic. Candidates who were able to identify that igneous rocks are hard and therefore, are difficult to erode, were able to gain both marks. In the case of the other common approach to the question, most candidates were able to state that igneous rocks are volcanic, gaining one mark. However, they were less successful at gaining the second development mark - which needed to go beyond just stating that volcanoes 'are upland'.

(c) Explain **one** reason why areas of igneous rock are usually upland.

(2)



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Examiner Comments

This response has clearly identified that igneous rocks are hard (1 mark) and has also then explained that this makes them difficult to erode (1 mark).

Question 1 (d) (i)

This question involved candidates having to locate a 6 figure grid reference on an OS map. Having located the grid square they then needed to use the map key to identify the type of woodland. Most candidates were able to do this although, some candidates gave answers such as 'plantation' which were incorrect. It is important that OS map skills are taught as an integral part of the course and that candidates are familar with maps at different scales.

Question 2 (a)

This question was not well answered by many candidates. Mass movement is a key term from the specification and it is important that candidates are familiar with all the terms listed. Many candidates simply gave an example of a mass movement process (eg slumping) rather than defining the term. Other candidates suggested it was the movement of material along a river or stretch of coastline, (possibly confusing mass movement processes with longshore drift) rather than focusing on the moverment of material downhill or due to gravity.

2 Coastal landscapes are constantly being changed by different physical processes.

(a) Define the term **mass movement**.

(1)

Mass movement is the movement of large materials, due to the pull of gravity

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Examiner Comments

This candiate has identified the role of gravity (1 mark). There is no need to give an example of a mass movement process as the command word is define and the question has a 1 mark tariff.

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Examiner Tip

It is important to focus on both the command word and the number of marks available.

2 Coastal landscapes are constantly being changed by different physical processes.

(a) Define the term **mass movement**.

(1)

The movement of material down a slope due to gravity

ResultsPlus
Examiner Comments

This candidate has clearly stated both that mass movement involves downward movement and also that it is due to gravity. Both of these points are in the mark scheme and are creditable.

Question 2 (b)

Most candidates were able to name a coastal landform created by deposition with 'beaches' and 'spits' being the most popular answers. A small minority of candidates were confused with erosional landforms (eg cliffs and bays).

Question 2 (c)

This 'explain' question had 2 marks available. Candidates were required to identify a rock characteristic (eg hardness or degree of faulting) and then link it to the formation of a headland. Simply stating that a 'hard rock' will lead to the formation of a headland would not gain the second mark. Suitable develoment might link it to the rate of erosion of the rock where a headland is found. Candidates who identified two or more characteristics were only awarded 1 mark unless there was a linked development point.

(c) Explain **one** way rock type leads to the formation of headlands.

(2)

A more resistant rock type leads to the formation of headlands. This is because it is more difficult for waves to erode the sediment. Therefore, rock is left protruding out into the sea.

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Examiner Comments

This response was awarded the full 2 marks. The candidate has identified a rock characteristic ('more resistant') and has then linked it to being more difficult to erode.

Question 2 (d)

The command word in this 8 mark question is 'examine' which requires candidates to break something down into individual components/processes, say how they individually contribute to the question's theme/topic and how the components and processes interrelate.

While the mark scheme identifies the indicative content for this question, this is not an exhaustive list and candidates were awarded marks for relevant understanding, interpretation and skills which were not listed. Ultimately, when deciding on the final mark, examiners use the level descriptors to allocate a 'best fit' level to the response and then decide where, within the level, the response falls. The level descriptors are the same for all 'examine' questions within this paper (Q02d, Q03d and Q04d), and also across all the papers in both GCSE geography specifications. It is therefore important that centres and candidates become familiar with them and how they are applied.

In the case of these questions, the assessment objectives (AOs) which are being examined are AO3 (4 marks) and AO4 (4 marks). To secure the AO4 marks, candidates are required to use geographical skills to extract information from the figure in the resource booklet which will help them answer the question.

In the case of Q02(d), this could have included details regarding the amount of beach lost due to erosion, the location of areas of housing which have been lost and details of where erosion of the cliffs has been less rapid. However, many candidates simply referred to 'houses being lost' or 'cliffs are eroding' which could apply to any stretch of coastline. The key to securing the AO4 marks is to make sure that evidence is included from the resources which are in front of the candidate. They need to write about what they can see and infer from the resource, rather than simply writing about what they have learnt in class.

In relation to the AO3 marks, the candidates were required to explain how these changes would impact on people and the environment in this location. While many candidates often did this part quite well, their overall mark was limited by their tendency not to write about what they could see in front of them, but rather what they had learnt and revised. Candidates who simply wrote about the impact of coastal erosion in general terms (not linked to the photos) were limited to level 1 (2 marks) if there was no clear reference to evidence from the photos.

Candidates who were able to extract some information from the photos were often then able to blend this with explanation of how this may have affected people and the environment in this location - and were able to access level 2. To move up higher within this level or to move into level 3, candidates really needed to extract a wider range of information from the resource material and use it to support their answer.

(d) Study Figure 2 in the Resource Booklet.

Examine how coastal retreat has affected people and the environment in the landscape shown in Figure 2.

(8)

In 1996, the coast's beach was approximately 60 ~~metres~~ metres whereas it has retreated to 39m by 2012. This is due to ~~more~~ destructive waves transporting sediment away. This significantly smaller beach will have reduced tourism as there is less room for tourists. In the middle of the photo, there was a housing in 1996 but not in 2012. The area they used to be ~~there~~ has ever been eroded. This has many social impacts as people will have to go through the stress of moving which may require moving jobs, schools, etc. The smaller beach will also cause families distress as the reduced tourism could impact local businesses reliant on tourism. Some houses were moved from that area before they fall into ~~sea~~ the sea meaning economic crisis as the land's value decreases. This will affect the owners' lives. The caravan park further north-west ~~are~~ is at a much greater risk in 2012 of falling into the sea. This, again reduces tourism elsewhere as well as in the park itself as the owner will lose land, have less place for their caravans and will suffer. The farmland has also been eroded at its cliffs are now less steep and the land's more vulnerable. The other green areas like the one near the housing and caravans are at risk which will lose the provision of habitats for many animals like birds,

decreasing the coast's biodiversity. The groynes in 1996 are now completely underwater heightening & its lesser appeal for tourists to sit on. The farmland lost will also reduce biodiversity of the varians plants and animals there. The loss of sediment will & make beach's animals vulnerable as well as plants.

(Total for Question 2 = 12 marks)

The trees in the church are also increasingly at risk which are crucial in the environment they produce oxygen, store CO_2 and provide home for animals.

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Examiner Comments

This response was awarded level 3 - 8 marks. The candidate has made clear references to evidence from the figure. This includes references to the amount of coastal retreat as well as the location of the houses which have been lost.

Question 3 (a)

Many candidates wrote generally about water flowing down the river/exiting the mouth of the river, and were not specific enough in relation to the volume of water flowing past a point over a unit of time.

3 River landscapes are constantly being changed by different processes.

(a) Define the term **river discharge**.

(1)

river discharge is the volume of water flowing through a section of the river over a certain amount of time.

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Examiner Comments

This candidate has given an accurate definition of 'river discharge' and was awarded 1 mark.

ResultsPlus
Examiner Tip

It is important to know and understand what each of the key terms listed in the specification mean.

Question 3 (b)

Most candidates were able to name a method of transportation that takes place in a river. A small minority of candidates were confused with erosional processes (eg abrasion or hydraulic action). Some candidates also wrote a description of the process, this was not required as the command word was 'name'.

Question 3 (c)

This 'explain' question had 2 marks available. Candidates were required to identify the role of flooding in the formation of a levee for 1 mark. The second development mark was then for a link to either the processses involved in deposition (eg river loses energy and deposits its load), or the location of the deposited material (along the banks of the river). If candidates simply stated that material is deposited along the river banks but did not link this to the role of flooding, only 1 mark would have been awarded, even if they then went into detail about why deposition takes place (eg water loses energy).

(c) Explain **one** way that deposition leads to the formation of levees.

(2)

Material is dropped when energy is lost by the river. This builds up at the banks of a river and causes levees.

ResultsPlus
Examiner Comments

This response was awarded 1 mark. The candidate has identified the location of the deposited material (1 mark) but has not linked it to the role of flooding.

(c) Explain **one** way that deposition leads to the formation of levees.

(2)

• When the river floods, ~~the~~ its banks the water loses energy, so doesn't have enough to carry larger sediment previously carried in suspension, so that is deposited to the sides of the river, helping just to form levees

ResultsPlus
Examiner Comments

This response was awarded 2 marks. The candidate has identified the role of flooding (1 mark) and has identified the location of the deposited material (1 mark).

Question 3 (d)

Q03(d) focuses on the interpretation of two storm hydrographs (which are an integrated skill in sub-topic 1B) and candidates could have used a range of evidence from the graphs (eg differences in peak discharge or lag time, steepness of rising and falling limbs). On the whole, candidates answering this question were better able to extract and use information from the figure than was the case in Q02(d) and Q04(d). There were far fewer candidates who were limited to level 1 - 2 marks because they had not used evidence from the resource.

In relation to the AO3 marks, the candidates were required to explain the link between the differences in the shape of the hydrographs and land-use. It was pleasing to see that many candidates, having extracted key information from the resource, were then able to weave it through their answer. This allowed them to access level 2 and, in many cases, go into level 3. The range of evidence extracted from the resource was important, as was their ability to use it to support their explanation.

(d) Study Figure 3 in the Resource Booklet.

Examine how land use affected the storm hydrographs for River A and River B shown in Figure 3.

(8)

In river A, the discharge of the river dramatically increases to over 260 cm^3/s at the peak flow of the river. The rising limb also has a very steep gradient which shows discharge increased very quickly. The lag time was only 3 hours which also shows how quickly discharge increased. River A is in an urban area and therefore there is lots of concrete and tarmac which are impermeable surfaces. This means the water can't pass through and therefore it runs straight into the river channel. There will also be no or very few trees which reduces interception

therefore more water runs straight into the river, increasing discharge dramatically. In river B, the discharge of the river only increases to 70 m^3/s and it took the lag time is 6 hours. This means the discharge of the river didn't increase as rapidly as river A. The rising limb also has a much gentler slope which shows the discharge went up fairly slowly. River B is in a ~~rural~~ forested area meaning there is soil to infiltrate the water so less water runs into the channel. There will also be vast amounts of trees to increase interception which means less water reaches the ground to run into the river.

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Examiner Comments

This response was awarded level 3 - 8 marks. The candidate has extracted a range of evidence from the resource (eg peak discharge figures, lag time, slope of rising and falling limbs) and has used this to contrast the two hydrographs. They have also provided a clear explanation for the differences which they have identified.

Question 4 (a)

The define questions were not answered well by many candidates. Some candidates did little more than rewrite the question or simply referred to a landscape which has glaciers. Relatively few understood that the term 'relict' refers to the past and therefore, these are landscapes that no longer have glaciers. This is an important idea as this section of the specification is focused on the changing physical landcape in the UK - and the UK, of course, no longer has glaciers.

4 Glaciated upland landscapes are constantly being changed by different processes.

(a) Define the term **relict glacial landscape.**

(1)

A landscape that once housed glaciers, but in an interglacial period all the ice has melted back to reveal the landforms.

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Examiner Comments

This candidate was awarded 1 mark. Although the response is not expressed very clearly, it does show the idea that the glacier is no longer present.

Question 4 (b)

Most candidates were able to name a type of mechanical weathering process that operates on glacial landscapes. A small minority of candidates were confused with erosional processes (eg plucking or abrasion). Some candidates also wrote a description of the process which is not required as the command word was 'name'.

Question 4 (c)

This 'explain' question had 2 marks available. Candidates were required to identify a relevant impact that human activity has had on glaciated landscapes (eg deforestation, increased soil erosion), and then add a further development point (eg in terms of the activity which is causing the impact). While many candidates were able to gain the first mark, they often struggled to make a clear link to secure the second one. Using linking phrases such as 'this means that' and ' this is due to', could help to improve the clarity of candidates' responses and 'guide' the candidate to the second mark.

(c) Explain **one** way that farming can have an impact on glaciated landscapes.

(2)

Farming can lead to over grazing, which destroys the roots of plants. The roots can no longer hold together the soil, so soil lacks support and. The soil is more likely to be weathered and eroded, formally more erosional glacial landscapes e.g. interlocking spurs.

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Examiner Comments

This response was awarded 2 marks. There is a clear impact (soil erosion) which was awarded 1 mark and a clear development point (linking soil erosion to overgrazing) to secure the second mark.

Question 4 (d)

In Q04(d), candidates could have included details extracted from the map (eg the height of the headwall or the width of the glacial lake) and from the photo (eg bare rock face at the back of the corrie). However, many candidates wrote simply about the formation of a 'textbook' corrie and made little or no reference to evidence from the map or photo. In cases where no evidence was given the response was limited to level 1 - 2 marks even if the 'textbook explanation' was very good. The key to securing the AO4 marks is to make sure that evidence is included from the resource which is in front of the candidate, and that they write about what they can see and infer from the resource, rather than simply writing about what they have learnt in class.

In relation to the AO3 marks, the candidates were required to explain how the corrie shown on the photo and map had been formed. While this does require details of the sequence and process explanation, this needs to be linked to evidence from the photo and/or map.

Candidates who were able to extract some information from the map and/or photo and were able to provide some explanation of corrie formation, were able to access level 2. To move up higher within this level or to move into level 3, candidates really needed to extract a wider range of information from the resource material and use it to support their answer. For level 3 a clear sequence of formation was required.

(d) Study Figures 4a and 4b in the Resource Booklet.

Examine the role of erosional processes in the formation of the corrie shown in Figures 4a and 4b.

(8)

In the formation of the corrie, erosional processes have important role. In figure 4a, we can see a corrie lake formed in the bottom of a corrie. The corrie has an arm-chair shape. When snow accumulate on a hollow on the mountain it moves downwards because of gravity and its own weight. When ice is moving downwards, the backwall of the Corrie experienced erosional processes such as plucking, abrasion and ~~freeze~~ exfoliation. Plucking means that when the ice moves downward, some rocks are freezed by the ice at the base of the system, they will be plucked

out and carried away by the ~~movement~~ movement of ice. Vertical erosion happens in the formation of corrie, ice abrase and pluck off the stones at the back wall of the corrie like "sand-paper", this is called abrasion. Rocks that are carried by the ice due to plucking are now scrubbing the back wall of corrie to deepen and polish the landscape.

In figure 4b, we can see a area of corrie and a corrie lake located at 7112 on the map of Cadair Idris, Wales. By looking at the ~~latitude~~ latitude of these mountains, the corrie area is shallowed and deepened by ~~the~~ erosional processes. Abrasion has ~~its~~ the most important role because it creates the "armchair" shape of the corrie and deepen the hollow on the mountain by vertical erosion.

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Examiner Comments

This response was awarded 8 marks. The candidate has made clear references to the figures in their response (including using the words 'in Figure 4b ...') and has provided information such as grid references and details of where the corrie lake is located. The candidate has also shown a clear sequence of formation and has referred to specific erosional processes.

Question 5 (a)

This question involved the candidates labelling a diagram of the global atmospheric circulation cells. This was done well by most candidates although some who had the right labels, applied them to the wrong cells.

Question 5 (c)

In this 3 mark 'explain' question, candidates were required to identify a valid reason for why the equator receives more heat energy than the poles. Two further marks were available for their expansion of the reason.

In some cases, candidates thought that the reason is that the equator is 'closer to the sun' in the summer. Some candidates were able to give a valid reason (eg concentration of solar energy) but were then unable to develop it any further. Some candidates drew very simple diagrams and these helped them to build an answer which was more developed. While there will not be 'double credit' for information on the diagram which is also written in the candidate's response, this may be a way for the candidate to develop an answer which is more logical and act as a prompt.

(c) Explain **one** reason why more heat energy is received at the Equator than at the poles.

(3)

One reason is because at the equator, the suns rays are ~~more~~ spread over a very small area of land, which makes the heat transferred to the earth much more concentrated, whereas at the poles, because of the curve of the earth, the suns rays must be spread over a larger area, so the heat transferred will be of a much lower concentration at the poles compared to the equator.

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Examiner Comments

This response was awarded 3 marks. The candidate has identified the role of the curvature of the Earth (1 mark), has then linked this to the sun's rays being spread over a smaller area at the equator (1 mark), and mentioned they are more concentrated (1 mark).

Using simple diagrams can help to support an answer. It is important, however, not to duplicate the material which is included in the written response.

Question 6 (a) (i)

In this question, candidates were required to calculate the range of temperatures shown on a line graph. This question did require mathematical workings to be shown and 1 mark was given for the correct answer. Most candidates did give the correct answer which was pleasing to see. In the case of candidates who used the correct method to calculate the range (highest figure - lowest figure) but had misread the graph, 1 mark was given for the correct workings but the second mark for the correct answer was not awarded.

6 The global climate was different in the past and continues to change due to natural causes.

(a) Study Figure 6a in the Resource Booklet.

(i) Calculate the range of temperatures shown in Figure 6a.

You must show your working in the space below.

(2)

5 - -9 = 14

14 °C

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Examiner Comments

This response shows the correct answer (1 mark) and workings (1 mark) and was awarded 2 marks.

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Examiner Tip

It makes it much clearer if the final answer is written in the answer space provided (next to the units of measurement).

Question 6 (a) (ii)

In this question, candidates were required to state two pieces of evidence of natural climate change. It should be noted that some candidates gave 'historical records' as one of their answers. This was not awarded a mark as the question required them to state 'two other pieces of evidence' apart from historical records.

Historical records such as Figure 6a provide evidence of natural climate change.

(ii) State **two** other pieces of evidence of natural climate change.

(2)

1 tree rings

2 ice cores

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Examiner Comments

This response was typical of those which were awarded 2 marks. It is important to note that the command word in this question was 'state', and therefore developed answers (eg explaining how they support climate change) were not required.

Question 6 (b)

This 3 mark 'explain' question required the candidates to identify one of the Milankovitch cycles (eg changes to the axial tilt) for the first mark. They were then required to develop their answer to explain how this change can affect global temperatures. For example, by saying that sometimes the Earth's tilt is greater (1 mark), which leads to greater seasonal temperature variation (1 mark). While many candidates were able to gain the first two marks they were often incorrect in their final link to changes in temperature.

(b) Explain **one** way in which the Milankovitch cycles can affect global temperature.

(3)

Axial tilt or Obliquity ~~is~~ changes how much the earth is tilted at it's axis. The tilt changes between 21.7° - 23°. The more the earth is tilted, the more extreme seasons and a bigger seasonal difference. This affects global temperature yearly.

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Examiner Comments

This response was awarded 3 marks. The candidate has identified that the axial tilt changes (1) and that the Earth is sometimes tilted more (1), which then leads to greater seasonal temperature variation (1).

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Examiner Tip

If a question asks you to explain 'one' way it is important that you do not give a range of ways.

Question 6 (c) (i)

This question required candidates to identify a feature labelled on a satellite image of a tropical cyclone. The arrow points clearly to the 'eye' of the storm. A range of responses was accepted including 'eye', 'eye of the storm' and 'storm eye'.

(c) Tropical cyclones develop under specific conditions and in certain locations.

(i) Study Figure 6b in the Resource Booklet.

Identify the feature labelled **X** on Figure 6b.

(1)

There is a forme of a hurricane and called the ~~eye~~ eye.

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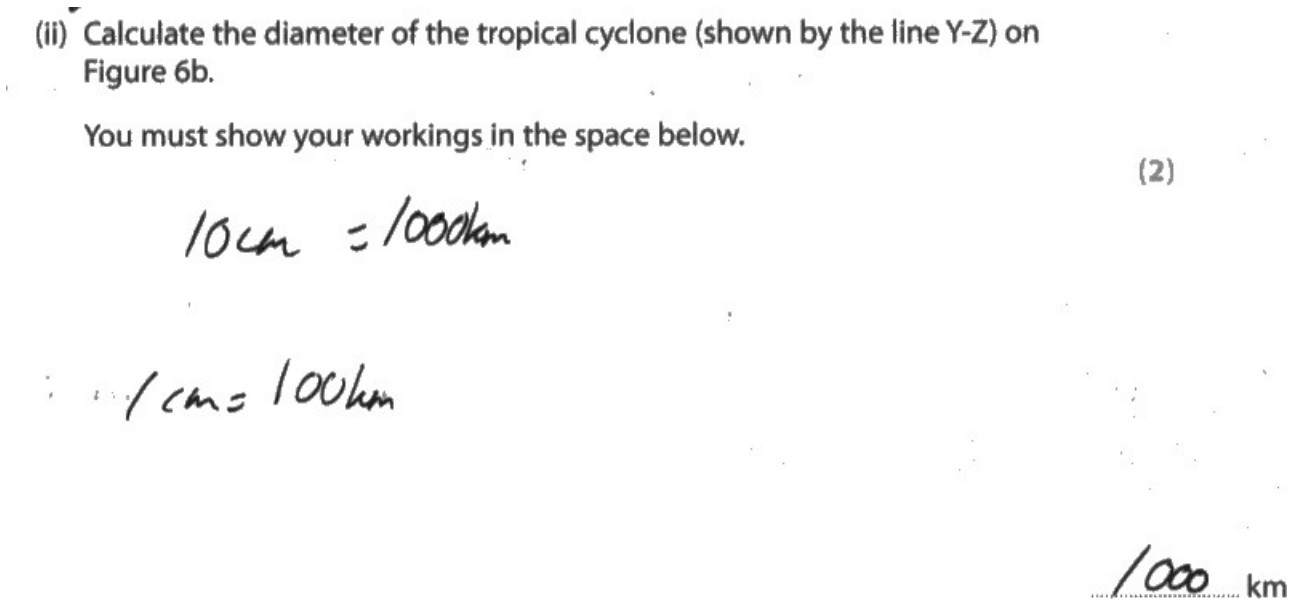
Examiner Comments

This response was awarded 1 mark as the candidate has identified the 'eye'. As the command word was 'identify' a full sentence was not required and simply identifying 'eye' would have gained the mark. This is important to bear in mind as some candidates appear to have run out of time towards the end of the exam paper and 'saving words' earlier on in the paper will help with this issue.

Question 6 (c) (ii)

Q06(c)(ii) required candidates to measure the length of the line Y-Z shown on the satellite image of the tropical cyclone. They were then required to use the map scale to convert the measured distance into kms. While most candidates were able to measure the line accurately, some were unable to use the map scale. Where candidates had measured the line incorrectly but had used the scale correctly, they were awared 1 mark ('workings mark').

There is a space in the answer booklet for the final answer and it is very helpful if the final answer could be written on the answer line. However, if it is not written in this space but it is clear that the correct answer has been given, this will be credited.



(ii) Calculate the diameter of the tropical cyclone (shown by the line Y-Z) on Figure 6b.

You must show your workings in the space below.

(2)

10cm = 1000km

1cm = 100km

1000 km

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This response was awarded 1 mark. Although the candidate did not give the correct answer (as they had not measured the line correctly), they had used the scale correctly and so were awarded a 'workings mark'.

ResultsPlus Examiner Tip

Candidates should ensure that they have a ruler in the exam. It is also important to practise measuring distances on maps and converting these measured distances using the scale on a range of map types.

(ii) Calculate the diameter of the tropical cyclone (shown by the line Y-Z) on Figure 6b.

You must show your workings in the space below.

(2)

100km X 9 = 900km

1cm = 100km

900 km

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Examiner Comments

This response was awarded 2 marks. The candidate has given the correct answer (1 mark) and has shown correct workings using the scale (1 mark).

Question 6 (d)

Q06(d) directed the candidates to information contained within a resource. The command word in this question was 'suggest'. As this was also a four-mark question, there were two marks available for each developed reason; with one mark for identifying a difference between the two locations (AO3), and a further mark for development through explanation of this difference (AO2). As each point was worth 2 marks, a range of differences within each one was not required. The differences in terms of impact needed to be evident from the figure.

(d) Hurricane Matthew was the first Category 5 Atlantic hurricane since 2007.

Study Figures 6c and 6d in the Resource Booklet.

With reference to Figures 6c and 6d, suggest **two** reasons for the different impacts of Hurricane Matthew on Florida (USA) and Haiti.

(4)

1 Haiti is a developing country with a low GNI per capita. The lack of money means lack of hurricane shelters. lack of hurricane shelters results in alot of deaths (576).

2 Florida is a developed country with a high GNI. Florida had also known the hurricane was on its way whereas haiti did not. it led to 47 deaths as they planned to evacuate before.

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This response was awarded 4 marks. The first part of the response links differences in the availability of hurricane shelters to the number of deaths, while the second part links differences in levels of preparation to the number of deaths.

Question 6 (e)

The command word of this 8 mark question is 'assess'. This requires candidates to use evidence to determine the relative significance of something, giving consideration to all factors and identifying which are the most important.

While the mark scheme identifies the indicative content, this is not an exhaustive list and candidates were awarded marks for relevant understanding, interpretation and skills which were not listed. Ultimately, when deciding on the final mark, examiners use the level descriptors to allocate a 'best fit' to the response and then decide where the response falls within the level. The level descriptors are the same for all 'assess' questions within this paper and across all the papers in both GCSE Geography specifications. It was evident, overall, that candidates had been better prepared for this type of question than in the first series of the paper. A greater proportion of candidates did include judgements in their answers. These were normally found either at the end of each paragraph or in an overall summarising paragraph at the end of the response.

In the case of 'assess' questions, the assessment objectives which are being examined are AO2 (4 marks) and AO3 (4 marks). To secure the AO2 marks, in the context of this question, candidates were required to identify and explain physical and human causes of drought. There was no requirement for candidates to focus on a particular location but in many answers good use was made of located knowledge to support and contextualise the answer.

In relation to the AO3 marks, the command word 'assess' requires candidates to write a balanced argument which addresses the question. It also requires candidates to write a logical answer where the argument presented makes sense and is supported by the evidence presented. Finally, while not requiring a final concluding paragraph, the command word 'assess' does require judgements to be made. In the context of this question, this required candidates to weigh up the relative importance of physical and human causes of drought. This was often best done by structuring each paragraph around a different cause of drought and then to make judgement comments at the end of each of these paragraphs.

While there were examples of level 3 responses, many candidates got 'stuck' in level 2 because they did not make judgements, or they made judgements which were not supported by the evidence provided in the answer.

(e) Assess the following statement.

'Drought is mainly due to natural causes.'

(8)

A drought is a period of time where a region receives a level of rainfall significantly lower than average for a prolonged period of time, leading to high temperatures and potential water shortages.

One example of natural drought is in Ethiopia, which has regularly been affected by drought since the 1980s. The drought in 2015, however, was the worst it had faced in 30 years and was, like all the others, a meteorological drought, meaning it was caused solely by a lack of rainfall. Another type of drought is hydrological drought, when levels of rainfall drop to a point where water reserves cannot cope with demand. For example, the 2012 drought in California, where reservoirs began to dry up and local government passed a law calling for water usage to drop by 25% to preserve stores during the drought.

However, it could be argued that both meteorological and hydrological droughts are being caused and enhanced by human activity. The amount of fossil fuels burned, which produces green house gases and heats up the planet, has increased dramatically in the last 50 years and causes high temperatures leading and low rain fall, leading to drought. Additionally, population increase - the global population is now well above 7 billion people - and greater demand for water causes hydrological drought due to the depletion of water sources, as does the unsustainable use of water for example, the over-irrigation of farmland was a factor in causing and worsening

the hydrological drought there.

Overall, I believe that while the causes of drought in the past were usually natural, unsustainable fossil fuel burning, population increase and overuse of water mean that in the future, the causes of drought will most likely be human.

ResultsPlus
Examiner Comments

This reponse was awarded level 3 - 8 marks. The candidate has explained a range of different causes of drought (both physical and human) and has included located knowledge to support and contextualise the answer. Their points are well developed and judgements have been made both through the answer and at the end.

ResultsPlus
Examiner Tip

Using paragraphs to organise a longer response is often effective. Writing a short plan in the margin is also a useful strategy - perhaps focusing on the topic for each of the paragraphs.

Question 7 (a) (i)

This question required candidates to complete a line graph. They needed to plot the points accurately (mid-way through each month) and join the points together with a line to gain the third mark.

7 Tropical grassland and tropical rainforest are both examples of large-scale global ecosystems.

(a) Study Figure 7a below.

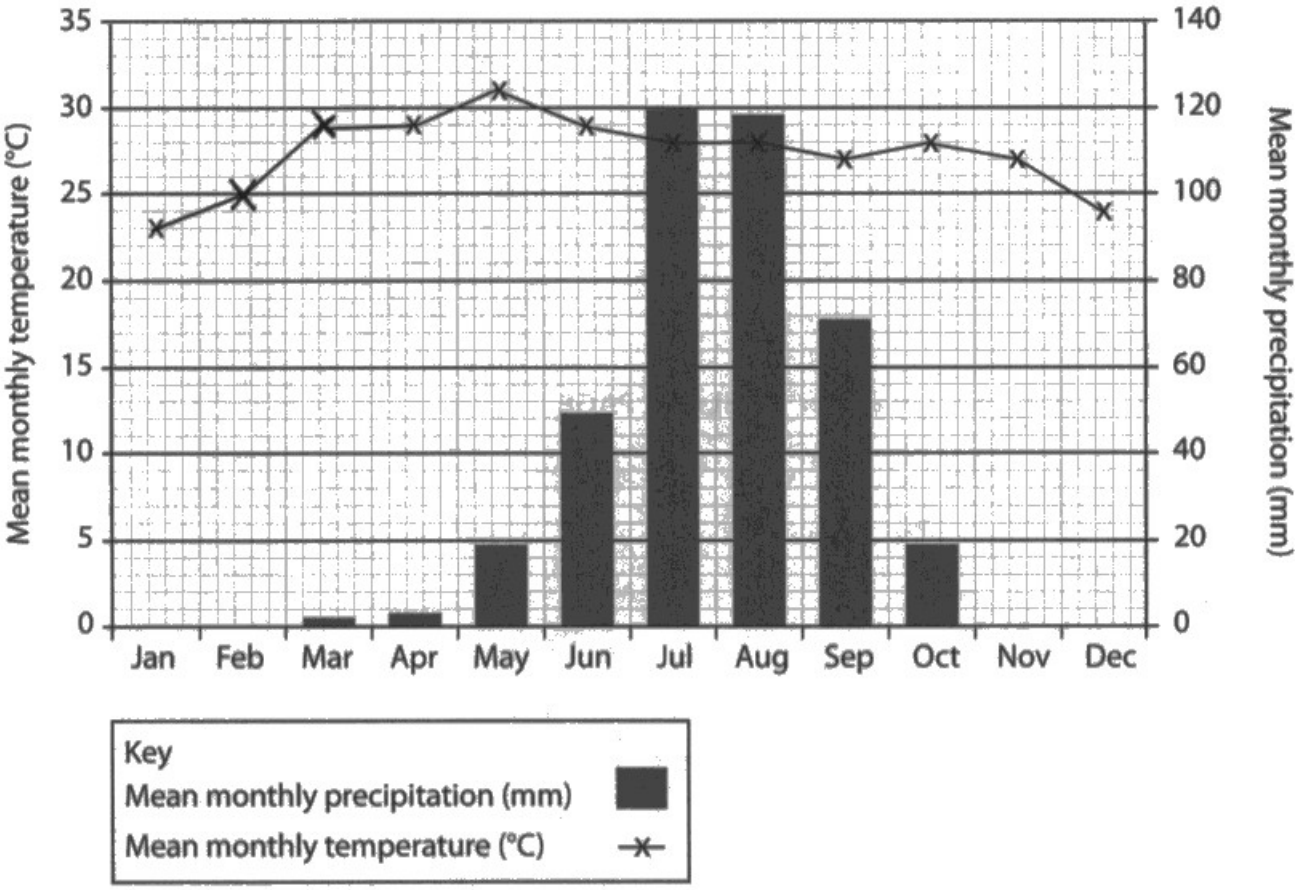
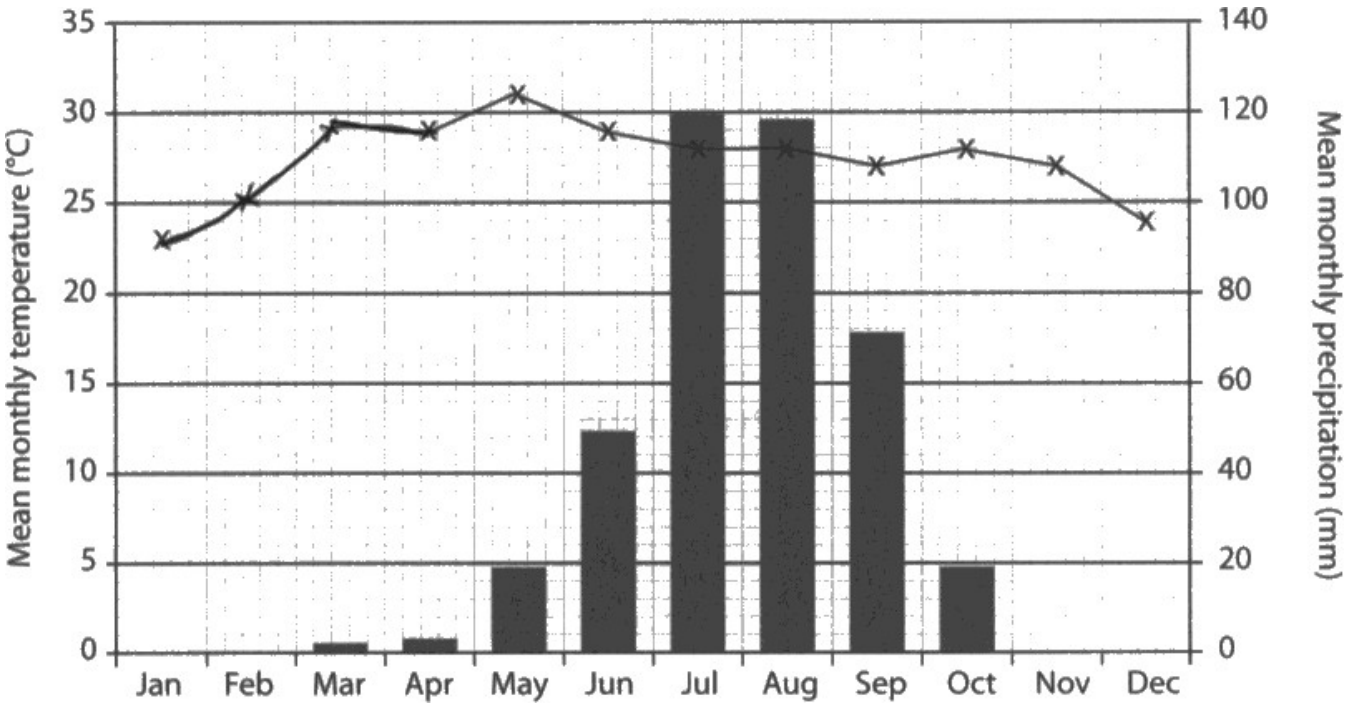


Figure 7a

Climate graph for Nyala, Sudan (Tropical Grassland)

ResultsPlus
Examiner Comments

This response was awarded 3 marks. The points had been plotted correctly and joined together with a clearly drawn line.



ResultsPlus
Examiner Comments

This response was awarded 1 mark. Although the February point was plotted correctly, the March point was not plotted mid-way through the month. The line mark was also not awarded as only one of the points had been plotted accurately.

ResultsPlus
Examiner Tip

Candidates should be provided with the opportunity to practise all the graph types which are listed on p.33 of the specification.

Question 7 (a) (ii)

In this question, candidates were required to calculate the mean value of a set of monthly temperatures. This question required candidates to give the correct answer and to show their workings. If the candidate gave an incorrect answer but showed correct workings they were awarded 1 mark. This could include where they had added the monthly temperatures up incorrectly but had then shown that this calculated number had to be divided by 12. Some candidates lost a mark because they did not follow the instruction to give the answer to one decimal place, while others lost both marks as they calculated either the median or the mode.

(ii) Calculate the mean monthly temperature using the data table.

Answer to one decimal place.

You must show your working in the space below.

23 + 25 + 29 + 29 + 31 + 29 + 28 + 28 + 27 + 28 + 27 + 24 (2)

= 299 ÷ 12

= 24.9 °C

24.9 °C

ResultsPlus
Examiner Comments

This response was awarded 1 mark. Although the answer given by the candidate was incorrect they had shown that the total monthly temperatures should be divided by 12 - so a 'workings mark' was given.

(ii) Calculate the mean monthly temperature using the data table.

Answer to one decimal place.

You must show your working in the space below.

(2)

Mean = $\frac{\text{sum}}{\text{total}}$

$= \frac{23+25+29+29+31+29+28+28+27+28+27+24}{12}$

$= \frac{328}{12} = 27.3$

27.3 °C

ResultsPlus
Examiner Comments

This response was awarded 2 marks. The correct answer was given to 1 decimal place (as required by the question) and correct workings were shown.

Question 7 (b)

Q07(b) was not answered well by many candidates. The specification does state that candidates should be taught the distribution of the world's large-scale ecosystems and the role of climate in influencing their distribution. However, many candidates did not seem to understand what was meant by the term 'distribution' and were also unable to identify any large-scale ecosystems. It is important that terms such as 'distribution' are taught in a way which will allow candidates to use their understanding to 'un-pick' the questions being asked.

(b) Explain **two** ways climate can influence the distribution of large-scale ecosystems.

(4)

1 climate influences the distribution of ecosystems because some plants are specifically adapted to a climate so an ecosystem will form in this area.

2 Also there are some animals which are adapted to a specific climate so an ecosystem will form there.

ResultsPlus
Examiner Comments

This response was awarded 0 marks. Although the candidate has made some references to elements of ecosystems there was no reference to specific large-scale ecosystems or the climate factors affecting their distribution.

1 The climate close to the equator is hot and damp meaning here the ecosystems here are adapted to hot wet climates, like tropical rainforests, these usually lie along the equator as they are adapted for these temperature conditions.

2 The climate close to the poles is very cold as it is furthest from the equator meaning it is the leasted heated, these areas are cold and dry as the cold cannot have much moisture, these biomes such as tundra lay here as they are adapted to this climate.

ResultsPlus
Examiner Comments

This response was awarded 4 marks. The candidate has identified where two large-scale ecosystems are located at a global scale (distribution) and has then linked each of these to an element of the climate found in these areas.

ResultsPlus
Examiner Tip

Work through all the papers (specimen and actual) and identify the key vocabulary that are being used (eg words such as 'distribution', 'frequency' and 'characteristics'), and embed these in your teaching.

Question 7 (c)

This question required candidates to use the resource to identify and then explain one way human activity can damage marine ecosystems in the UK. This was a well answered question overall and most candidates were able to use the resource effectively. Some candidates, however, talked more broadly about impacts which could not be identified from the figure (eg dumping of plastics in the ocean) and therefore were not awarded marks. As the question included the words 'with reference to Figure 7b' they were required to use evidence from the figure.

(c) With reference to Figure 7b in the Resource Booklet, explain **one** way human activity can damage marine ecosystems in the UK.

(2)

Over-fishing for example can reduce the amount of biodiversity, effecting the marine food chains and disrupting the other organisms

ResultsPlus
Examiner Comments

This response was awarded 2 marks. The candidate has identified a relevant impact from the figure (over-fishing) and has then developed the answer through explanation (linked to the impact on food chains).

Question 7 (d)

This is another example of a 3 mark 'explain' question. Candidates were required to identify a relevant reason (eg rapid decomposition of litter material) and then develop this reason further through explanation. It was clear from a significant minority of answers that they were unsure of what is meant by the term 'litter'. Some candidates referred to people 'dropping litter' in the rainforest rather than to the accumulation of leaves and other dead plant material on the forest floor.

(d) The tropical rainforest nutrient cycle is very rapid.

Explain **one** reason why the litter store is usually very small in tropical rainforests.

(3)

Because of the humid warm conditions, microorganisms thrive as it is their ideal conditions. This means there are many, so the decomposition of litter is quick, so the store is small as nutrients are quickly moved from it to the soil store.

ResultsPlus
Examiner Comments

This response was awarded 3 marks. The candidate has identified the role of rapid decomposition (1 mark) and has then developed this through links to the humid, warm conditions (1 mark), and to the role of micro-organisms (1 mark).

Question 7 (e)

This question was generally answered well, with many candidates able to identify an economic cause (eg mining or commercial farming) and then link this to deforestation shown in the figure, giving them 2 marks. In order to achieve the third mark they needed to develop their economic cause - for example, by linking the activity to why it is economically useful (eg provides export earnings).

(e) Study Figure 7c in the Resource Booklet.

Suggest **one** economic cause for the changes to the tropical rainforest shown on Figure 7c.

(3)

One economic cause for the deforestation, shown in Figure 7c is the high demand for timber. Timber is used to make many products such as paper and furniture all in high economic demand. Subsequently, ~~high~~ due to the money made through selling timber, deforestation takes place.

ResultsPlus
Examiner Comments

This response was awarded 3 marks. The candidate has identified a relevant economic activity (selling timber) and has linked this to deforestation. They have then gone on to say that timber is used to make paper which is sold (as a further development point).

ResultsPlus
Examiner Tip

When using a resource, always read the key and title carefully before attempting the question.

Question 7 (f)

Q07(f) required candidates to explain two separate ways that tropical rainforests can be managed sustainably. Most candidates appeared to have some idea of what the term 'sustainably' means which was pleasing. The first mark was given for identifying the way (eg providing environmental education), and the second mark was then given for the development of this way (eg so that it helps people realise the importance of protecting the forest in the future).

(f) Explain **two** ways that tropical rainforests can be managed sustainably.

(4)

1 ~~NGOs like Fundecor~~ Governance can provide tax deduction incentives for landowners who conserve rainforest land. This encourages ~~sustainble~~ sustainable management, like the 1991 law introduced in Costa Rica

2 Ecotourism like the Monteverde Cloud Resort ~~in~~ Costa Rica can include education on how to preserve rainforests and provide money ~~for~~ economy without having to exploit the timber. It's sustainable as 100% product made can be reinvested and awareness is increased.

ResultsPlus
Examiner Comments

This response was awarded 4 marks. The candidate has given two appropriate strategies (tax deductions for landowners and developing ecotourism) and has then developed each point, (landowners will conserve land and providing education on how to preserve the rainforest).

On these 4 mark open response 'explain' questions, candidates are unable to attain 3 marks by double-developing one point. Instead, make a point and then develop it by using further explanation. For example, by using the phrase 'which means that.. '.

Question 7 (g)

The final question on the paper proved challenging for many candidates. This is, in part, due to the use of the command word 'evaluate' but also the fact that this final question will always involve linking at least two parts of the topic C content. In this case, it linked topics 3.6c and 3.7c

It was disappointing to see so many candidates did not attempt to answer this question. This may have been due to the more challenging nature of the question, but may also have been caused by time management issues across the paper.

In relation to the question itself, it is important to recognise that any key term from the specification (eg 'biodiversity') can appear in an exam question. It is therefore important that centres are systematic in their teaching of the specification and make sure that sufficient emphasis is placed on the development of both knowledge and understanding of key terms.

For the AO2 marks, candidates were expected to recognise that deciduous woodlands tend to have moderate biodiversity and that this is linked to both physical factors (eg climate and soils) and human factors (eg clearance for agriculture). While a range of factors were required, this list did not have to be exhaustive - and focusing on a smaller range of factors in greater depth may help to improve the quality of explanation. A clear understanding of 3-4 factors and how they affect biodiversity was sufficient to access level 3.

In relation to the AO3 marks, the command word 'evaluate' required candidates to write a balanced argument which addressed the question. It also required candidates to write a logical answer where the argument presented makes sense and is supported by the evidence presented.

Finally, the command word ‘evaluate’ does require candidates to come to a definitive conclusion. In the context of this question it could involve identifying which group of factors (human or physical) has the greatest impact on the biodiversity of deciduous woodlands ecosystems. While it is likely that the concluding judgement will come at the end of the response, evaluative judgements made elsewhere in the response (eg at the end of each paragraph) are credited. It is important to note that there is no right or wrong answer to this question, but candidates should state clearly what they believe and why.

This question also has 4 marks allocated for the assessment of spelling, punctuation, grammar and use of specialist terminology. Obviously, candidates will not be awarded any of these marks if they do not answer the question or if their response does not achieve any marks for the 8 mark part. The use of paragraphs is one element which contributes to this mark and should be encouraged as it helps to structure candidates' responses.

(g) Evaluate the impact of physical and human factors on the biodiversity of deciduous woodland ecosystems.

(8)

Human cause factors greatly affected biodiversity of deciduous woodlands. Deforestation has a massive effect on the ecosystem as in the 20th Century 38% of Britain's deciduous woodlands were lost. This is to make space for housing and roads but also to make space for the more profitable coniferous trees. These both cause a reduction in habitats and plant species, so it leads to a reduction in biodiversity. Although the Forestry Committee are attempting to replant conif deciduous trees in area like the New Forest, these trees will take time to grow and the committee only manage 50% of the New Forest. As a result response to these negative human impacts will take time.

Climate change is the physical factor with the biggest impact. It will cause milder winters and so affect seed germination and cause more pests to survive the winter. The increased presence of diseases will also cause a reduction in biodiversity as native species die. A rise in temperatures will also cause an increased risk of droughts and forest fire. Fire will destroy habitats and kill animals and so reduce biodiversity. The increased drought risk will lead to native species migrating as they

cannot survive in the conditions. Biodiversity will be reduced as the presence of invasive species increase and native species decline.

In conclusion human factors currently have a bigger impact on biodiversity due to huge amounts of *

(Spelling, punctuation, grammar and use of specialist terminology = 4 marks)
(Total for Question 7 = 34 marks)

TOTAL FOR SECTION C = 34 MARKS
TOTAL FOR PAPER = 94 MARKS

* deforestation. Currently afforestation isn't on a wide enough scale to have a big impact. Currently physical factors have little influence, however in the future as climate change occurs the impact could be greater than human impacts. However these impacts are merely predictions and may not happen as expected. Therefore human impacts are certainly greater than physical ones currently

ResultsPlus
Examiner Comments

This response was awarded level 3 and scored the full 12 marks - 8 marks for the geography and 4 marks for spelling, punctuation, grammar and use of specialist terminology. The response is clearly structured and shows a range of human and physical factors. The candidate has made some judgement statements throughout the answer and has a clear concluding paragraph. The candidate has also considered issues of scale.

Using paragraphs to structure extended responses will help the candidate organise their thoughts and make it easier for the examiner to follow the train of thought.

Paper Summary

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

- Ensure that you are familiar with the command words used in this specification. For example, the difference between what is expected for 'examine' and 'assess'.
- In questions where there is reference to a resource, it is important that evidence from the resource is used to answer the question, as these are targeting AO3.
- In the 8 mark 'examine' questions in Section A, candidates must use evidence from the resources in their answers rather than simply repeating what they have learnt and revised. The information extracted from the resource should be used to support their answer. Making clear reference to the resource in their responses (eg 'Figure 3a shows that. . ') may help ensure that the candidate does use this evidence.
- In questions where they 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 to this.
- There will always be a few questions that require candidates to perform a calculation (AO4). It is essential that candidates have a calculator with them. It is also important to read the question carefully. For example, if the question states that they should 'show your workings' it is important that they do so.
- Candidates should be as accurate as possible when completing graphs or diagrams.
- Centres should spend time reviewing the specimen and live papers to ensure that they are familiar with key vocabulary which is being used in the questions - both in terms of key geographical terms (eg river discharge and biodiversity) and words which provide the 'slant' to the question (eg characteristics, distribution or frequency).
- Centres should prepare candidates for the exam using the wording of the specification and relate this to the content taught, so that candidates are familiar with question wording used in the examination.

Grade Boundaries

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

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

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