

Examiners' Report

June 2025

GCSE Geography A 1GA0 01

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications come from Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at <https://www.edexcel.com> or <https://www.btec.co.uk>.

Alternatively, you can get in touch with us using the details on our [contact us page](#).



Giving you insight to inform next steps

ResultsPlus is Pearson's free online service giving instant and detailed analysis of your students' exam results.

- See students' scores for every exam question.
- Understand how your students' performance compares with class and national averages.
- Identify potential topics, skills and types of question where students may need to develop their learning further.

For more information on ResultsPlus, or to log in, visit <https://www.edexcel.com/resultsplus>. Your exams officer will be able to set up your ResultsPlus account in minutes via Edexcel Online.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: <https://www.pearson.com/uk>.

June 2025

Publications Code 1GA0_01_2506_ER

All the material in this publication is copyright

© Pearson Education Ltd 2025

Introduction

This report is intended to provide an insight into candidate performance on Paper 1: The Physical Environment component – in particular, analysing the majority of questions in terms of what went well and where common mistakes and under-performance were evident.

The structure of the paper remains the same and is outlined below; please note that this (and future) question papers are based upon Issue 4 of the specification which has been published in the past 12 months.

This paper consists of three 30-mark sections. Of the 94 marks, up to 4 marks are awarded for spelling, punctuation, grammar and use of specialist terminology. The exam includes multiple-choice questions, short open response questions, calculations and 8-mark extended writing questions. The exam command words which are used in this paper are defined on page 43 of the specification. Each of the questions is mapped to one or more of the Assessment Objectives (AOs).

In **Section A** (The Changing Landscapes of the UK), candidates are required to answer all the questions in Question 1. They are also required to have studied two optional sub-topics from a choice of Coastal Landscapes and Processes, River Landscapes and Processes and Glacial Upland Landscapes and Processes. Candidates are required to answer two questions from Questions 2, 3 and 4.

In **Section B** (Weather Hazards and Climate Change), candidates are required to answer all the questions (Questions 5 and 6). The 4 marks for spelling, punctuation, grammar and use of specialist terminology were moved to the end of this section for the June 2024. This will continue in future series.

In **Section C** (Ecosystems, Biodiversity and Management), candidates are required to answer all the questions (Question 7).

Many candidates demonstrated a good level of geographical knowledge and understanding throughout the paper. They were able to develop their 'chain of explanation' well on higher tariff questions and show that they are able to effectively interpret exam command words. The calculation questions were answered well overall, although the percentage increase question proved challenging for some candidates.

In terms of the 8 mark examine questions, candidates continue to show improvement overall in using evidence from the figures to support their answers (AO4). However, there is still a tendency among some candidates to write about 'textbook' features or landforms rather than the ones shown in the figures. This is an area which should continue to be practised regularly by centres, using the examples from this and previous reports as a guide.

In relation to the other two 8 mark questions, the assessment of application and interpretation (AO3) once again appears to have proven challenging for some candidates. While candidates are generally comfortable describing and explaining impacts and approaches, they are less confident in making judgements about their relative scale or importance.

This report will provide exemplification of candidates' work along with tips and comments for a

selection of questions.

Question 1(b)

Most candidates were able to name a type of igneous rock. However, some candidates named a metamorphic or sedimentary rock which was incorrect.

(b) Name **one** type of igneous rock.

(1)

granite



This response was awarded 1 mark. The candidate has named granite as an example of an igneous rock (1).

(b) Name **one** type of igneous rock.

(1)

marble



This response was awarded 0 marks. This candidate was not awarded a mark as they have named an example of a metamorphic rock.

Question 1(c)ii

This question required candidates to identify one feature of the relief of the landscape within the identified grid square. This involved interpreting the contour lines within the square. It should be noted that the ability to recognise physical and human geography features on 1: 25000 and 1: 50000 OS maps is one of the integrated skills listed below the subject content on page 8 of the specification.

(ii) Identify **one** feature of the relief (shape of the land) in grid square 8951.

(1)

large hill



This response was awarded 1 mark. The candidate has identified that there is a hill in the grid square (1).

(ii) Identify **one** feature of the relief (shape of the land) in grid square 8951.

(1)

Swash



This candidate was awarded 0 marks. This response was not awarded a mark as the candidate has not written about a feature of the relief.



You will need to be able to interpret contour lines on an OS map.

Question 1(d)

This question proved challenging for some candidates. Many candidates focused on the formation of sedimentary rocks in ocean basins rather than the subsequent reasons for why differential erosion takes place. One mark was available for identifying a characteristic of a sedimentary rock which would explain why they often form lowland areas (eg softer or less resistant) and the second mark was for an explanation of how this would then lead to less erosion. Candidates could also get both marks by explaining why igneous rocks tend to form upland areas, leaving the sedimentary rocks as lowland.

(d) Explain **one** reason why lowland areas are often made of sedimentary rocks.

(2)

lowland areas are usually made of sedimentary rocks because they erode quicker, which makes the land lower.



This response was awarded 1 mark. The candidate has identified that sedimentary rocks erode more quickly (1) but has not explained why this is this case.

(d) Explain **one** reason why lowland areas are often made of sedimentary rocks.

(2)

Sedimentary rock is most commonly very soft. Therefore it is more easily eroded and found in lowland areas.



This response was awarded 2 marks. The candidate has identified that sedimentary rocks are soft (1) and has then gone on to explain that this means they are more easily eroded (1).

Question 2(a)

While a minority of candidates were able to define the term 'traction' clearly, many candidates did not have accurate knowledge of this process. Some simply referred to the idea of material being moved downstream by a river or along a coast by a wave. Other candidates were confused with other transportation processes such as saltation. Centres should ensure that candidates are clear about all the key terms from the specification and make sure that they can recall definitions.

2 Coastal landscapes are constantly being changed by different processes.

(a) Define the term **traction**.

(1)

Rocks gradually becoming smaller due to the friction caused by water that slowly erodes the rock.



This response was awarded 0 marks. The candidate has confused traction with attrition, an erosional process.

2 Coastal landscapes are constantly being changed by different processes.

(a) Define the term **traction**.

(1)

Traction is rocks being transported by rolling along river bed or seabed



This response was awarded 1 mark. The candidate has provided a clear definition of traction with the idea of the material being rolled along the river/sea bed (1).

Question 2(b)

This 2-mark 'suggest' question required the candidates to use evidence from the figure to help explain how mass movement had affected the cliff shown. One mark was reserved for this AO3 element which could have included recognising evidence from the figure that mass movement had taken place (eg material collected at the base of the slope) or for identifying a mass

movement process which may have affected this cliff (eg sliding or slumping). Many candidates gained this mark, which was pleasing to see, but some then struggled to develop their answers further. They could, for example, have explained how the identified process works. Another route to the second mark would have been to identify a piece of evidence from the figure that mass movement had taken place (AO3 mark) and then identified a mass movement process which might have affected the cliff.

(b) Study Figure 2a in the Resource Booklet

Suggest **one** way mass movement has affected this cliff.

You **must** use evidence from Figure 2a in your answer.

(2)

Mass movement has caused the cliff to move back. This is because over time, ~~the~~ the sea has forced it to move back.



This response was awarded 1 mark. The candidate has identified that the cliff has moved back (1) but there is no further development.

(b) Study Figure 2a in the Resource Booklet

Suggest **one** way mass movement has affected this cliff.

You **must** use evidence from Figure 2a in your answer.

(2)

Mass movement has effected this cliff because it became saturated and then slide down by the force of gravity as shown in the image.



This response was awarded 2 marks. The candidate has identified sliding as a mass movement process (1) and has then gone on to explain how sliding can be triggered by the

cliff becoming saturated (1).

Question 2(c)

The command word for this question was 'state'. This required candidates to recall a piece of information in relation to the question. It was only a 1 mark question and candidates were not required to develop their answer beyond giving the reason. Some candidates wrote several sentences for their answer which was not necessary. In the case of this question they needed to state a reason why coastal erosion can vary from place-to-place.

(c) State **one** reason why rates of coastal erosion vary from place to place in the UK.

(1)

One reason it varies from place to place
in the UK is due to weather



This response was awarded 0 marks. The candidate's answer that 'weather' is the reason for variations is too vague. They would have needed to link it to the idea, for example, that wind speed is a reason.

(c) State **one** reason why rates of coastal erosion vary from place to place in the UK.

(1)

The geology of the coast may be different



This response was awarded 1 mark. They have identified geology as their reason (1).

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, and how the components and processes interrelate.

The level descriptors are the same for all the 'examine' questions (Q02(d), Q03(d) and Q04(d)) within this paper and also across all the papers in both GCSE Geography specifications. In the case of these questions, the 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 figures in the resource booklet which will help them answer the question.

In the case of this particular question, relevant content relating to the AO4 marks could have included identifying and describing the characteristics of the different beaches shown in the figures (eg a shallow sloping sand beach and a steeper sloping shingle beach); providing the location of the beaches using grid references; measuring the dimensions of the beaches; using distance and direction to compare their relative locations or identifying the direction of the prevailing wind. Credit for the AO4 elements was also given where the candidate had used the information in the text boxes to support their answers and this had been developed further than simply copying the text. It was pleasing to see many candidates making use of evidence from the map and photo, but this is an area which still needs to be developed.

In relation to the AO3 marks, candidates were required to explain the processes involved in the formation of the beaches shown in the figures. This part was done well by many candidates with a good understanding shown of the processes involved in their formation. Some candidates also extended their answers by considering the role of the harbour wall (The Cobb) and how this will have interacted with physical processes to provide shelter to the sandy beach. Some candidates suggested that there was a spit shown on the figures – they appear to have got confused with the harbour wall. This was not credited.

(d) Study Figures 2b and 2c in the Resource Booklet.

Examine the role of physical processes in the formation of these beaches.

You **must** use evidence from Figures 2b and 2c in your answer.

(8)

One physical process affecting Harbor beach - which is around 1 km long and in the grid squares 3391 and 3491 - is constructive waves. This is because constructive waves have a stronger swash and a weaker backwash. This leads to long, flat beaches like Harbor beach as ~~shown~~ it is shown in the top picture of figure 2b. Therefore there is obviously less wave energy as it is in a sheltered harbor.

One physical process affecting Monmouth Beach - which is around 1 km long and is in the grid square 3391 - is mainly destructive waves. This is because there is more wave energy as it is in an area ~~of~~ that is more open. This leads to a stronger backwash and a weaker swash. Therefore more erosion is taking place which creates a shorter steeper beach as shown in the bottom picture of figure 2b.



This response was awarded Level 2 – 5 marks. The candidate has included a limited range of evidence from the figures. This includes identifying some features of the beaches (approximate length; some grid references; relative steepness). They have attempted to integrate the evidence into the answer. They have also made some attempt to explain their formation with reference to different wave types and the level of wave energy. Their explanation is only a partial one and the sequence of formation is not that well developed.



Make sure you use a range of evidence from the figures in both the 8-mark questions you answer. Where OS maps are provided, this could include using grid references; measuring distance and direction and using contours to interpret the relief.

(d) Study Figures 2b and 2c in the Resource Booklet.

Examine the role of physical processes in the formation of these beaches.

You **must** use evidence from Figures 2b and 2c in your answer.

(8)

In Figure 2b at the top we can see Harbour Beach. This profile of Harbour Beach shows a wide, flat and sandy surface. In Figure 2c we can see Harbour Beach in grid reference 339918 near Cobb. Harbour Beach is an approximately 0.5 km^{long} beach. Measured out using the grid reference in the bottom of Figure 2c. Figure 2c also shows us that Harbour Beach is 0.125 km wide at its largest point at grid reference 339917. This tells us there has been more deposition here. This may be due to wave refraction around the Cobb and Harbour which extends out 0.375 km. When waves hit the Cobb, they lose their energy and slow down, depositing sediment. We also know that Harbour Beach is a sand beach formed by constructive waves that occur 6 times per minute and have a stronger swash than backwash so create deposition. Finally, Figure 2c shows the prevailing wind is north east therefore longshore drift will occur north east and cause greater deposition on Harbour Beach.

Figure 2b also shows us Monmouth Beach which has high energy waves, it is a steep, stepped and uneven beach. Figure 2c shows Monmouth Beach is 0.375 km long and 0.0625 km wide which shows it has undergone a lot more erosion than Harbour Beach.

This is because it has no shelter so the waves from the Atlantic ocean will have a long fetch as they have travelled long distances. They will be destructive waves that occur 14 times per minute and have a strong backwash. This means Monmouth beach will be affected by hydraulic action and abrasion (Total for Question 2 = 12 marks) causing erosion. ~~and~~ There may be some deposition at Monmouth beach from waves that hit 0.125km headland Devonshire Head on the Virelle Rock causing wave refraction.



This response was awarded Level 3 – 8 marks. The candidate has included a range of evidence from the figures (eg identifying a range of contrasting beach characteristics; using 6 figure grid references to locate them; comparing their length and width; providing the direction of the prevailing wind). They have used this information well to support their explanation of the processes and the sequence involved in the formation of these beaches.

Question 3(a)

As with Q02(a), only a minority of candidates were able to provide an accurate definition of the key term in the question. Many candidates confused suspension with other transportation processes while some candidates referred to a definition of an erosion process.

3 River landscapes are changed by different processes.

(a) Define the term **suspension**.

Small Shingle bounced along the river floor (1)



This response was awarded 0 marks. The candidate has confused suspension with saltation.

3 River landscapes are changed by different processes.

(a) Define the term **suspension**.

Small particles carried in the river flow.



This response was awarded 1 mark. The candidate has the idea that sediment is being carried in the river flow.

Question 3(b)

This 2-mark 'suggest' question required the candidates to use evidence from the figure to explain how this river was being managed using hard engineering. One mark was reserved for this AO3 element which could have included strategies such as channelisation or building up the banks. These strategies needed to be evident in the figure. The second mark was for explaining how this

strategy would help manage the river (eg increasing the speed of the river's flow or increasing the capacity of the channel).

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

Suggest **one** way hard engineering is used to manage this river.

You **must** use evidence from Figure 3a in your answer.

(2)

They could use a dam to regulate the amount of water flowing in the river as the river is close to houses



This response was awarded 0 marks. Although building a dam is a hard engineering solution, it was not a method evident in the figure.

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

Suggest **one** way hard engineering is used to manage this river.

You **must** use evidence from Figure 3a in your answer.

(2)

Channelisation ~~has been~~ of this river to prevent flooding of agricultural land and move the water further downstream at a higher rate.



This response was awarded 2 marks. The candidate has identified channelisation as an example of a hard engineering strategy evident in the figure (1) and has then gone on to explain that it helps move water faster downstream (1).

Question 3(c)

The command word for this question was 'state'. This required candidates to recall a piece of information in relation to the question. It was only a 1 mark question and candidates were not required to develop their answer beyond giving the reason. In the case of this question they needed to state a reason why rivers usually become wider downstream.

(c) State **one** reason why rivers usually become wider downstream.

(1)

Because theres less velocity downstream so more water needs
to be held at a time



This response was awarded 0 marks. Although they have identified velocity as their reason they have suggested that it is lower, rather than higher velocity which is the reason - which is incorrect.

(c) State **one** reason why rivers usually become wider downstream.

an increase in lateral erosion



This response was awarded 1 mark. They have given more lateral erosion as their reason which is correct (1).

Question 3(d)

Q03(d) focused on the causes of the formation of the meanders and floodplain shown in the figures. In terms of the AO4 marks, candidates were able to obtain a range of evidence from the photograph, textboxes and OS map. Some candidates were able to gain a limited number of AO4 marks by mainly focusing on the information in the text boxes. This material was credited as long as it was further developed to support their answer. The candidates who gained 3-4 of the AO4 marks were likely to have used evidence from both resources with map evidence being used (eg direction of river flow; using grid references to locate features such as examples of river cliffs and slip off slopes; using contour evidence to identify the wide floodplain).

In terms of the AO3 marks, the candidates were required to explain how the meanders and flood plain had formed. This was done best when the candidates divided their answers up into paragraphs focusing separately on the different features. While meanders were generally explained well, the explanation of floodplain formation was more limited. A significant proportion of candidates did not write about their formation at all while some answers simply focused on what a floodplain is or what features are found, rather than explaining its formation. There were, however, some very well developed answers where candidates were able to explain the role of meander migration in their formation.

(d) Study Figures 3b and 3c in the Resource Booklet.

Examine the role of physical processes in the formation of the flood plain and meanders.

You **must** use evidence from Figures 3b and 3c in your answer.

(8)

Meanders are formed through erosion and deposition. For example, if an animal creates a burrow in the bank it can be expanded and creased through hydraulic action, as water and air is forced into the crack. Over time the creek will continue to expand until the river follows that path. Further erosion occurs on the outside of the bank as this is where the river has the highest energy. Furthermore, deposition occurs on the inside of the bank ~~as~~ as this is where it has the least energy. This causes the meander to change shape and path. As shown in figure 3b, as on the inside of the bend there is deposited sediment.

A floodplain is an area of land around a river which as shown by figure 3c are flat and uninhabited. The reason for the flatness is due to erosion and transportation. This is as when the river floods sediment is collected and brought into the river, as the water returns. The flood plain acts as a natural collection basin where sediment is also deposited. This is as during a flood the water loses its energy and any sediment being carried is deposited. This could be why there is a sandy like surface beneath the field in figure 3b.



This response was awarded Level 2 – 5 marks. The candidate has included a limited range of evidence from the resources (mainly relating to features of the landforms such as deposited material on the inside bend and the flat nature of the floodplain). They have included some process explanation although this lacks depth. This response is stronger on the AO3 elements than AO4.



Make sure you use a range of evidence from the figures in both the 8-mark questions you answer. Where OS maps are provided, this could include using grid references; measuring distance and direction and using contours to interpret the relief.

(d) Study Figures 3b and 3c in the Resource Booklet.

Examine the role of physical processes in the formation of the flood plain and meanders.

You **must** use evidence from Figures 3b and 3c in your answer.

(8)

Finally, we can see that in Figure 3b a meander of a length of 3.5 km has formed - a bend in the river as the river reaches the middle and lower course where it begins to laterally erode and land is much flatter and the river has to bend around more resistant rock. We can see that the meanders are so constantly changing shape with erosion occurring ^{where} on the fastest part of the outside of the meander bend with greater hydraulic action (thrust force of water eroding river bank) and abrasion (sediment being thrown at the river bank) and ~~solution~~ but on the inside bend deposition occurs due to greater friction so river loses energy and deposit sediment they are transporting. We can also see that in Figure 3c the ~~east~~ land near the river is relatively flat due to the ^{a maximum} contour lines reaching [^] 40 m in some areas such as 622 042. This floodplain forms due to the river flooding as in the winter when the river loses energy and floods it creates a U shaped valley hence why around the river the land is flat but further away it becomes deeper as contour lines become denser and also it deposits sediment it ~~is~~ ^{is} transporting on the floodplain by traction, suspension, solution and solution.

so it gradually increases in height and also the
alluvium deposited is very fertile hence why farms can be
found nearby the river. Floodplains also tend to form in the
lower and middle course where the river has more energy,
and the River Sever we can see flows from North West
to East.

(Total for Question 3 = 12 marks)

8.7 cm $\rightarrow$ 1 km

20 cm $\rightarrow$ 3.5



This response was awarded Level 3 - 8 marks.



The candidate has included a range of evidence from the figures (eg using grid references to locate features on the map; measuring distances; describing features of the meanders and flood plain). They have used this information well, to support their explanation of their formation, which is clearly explained with a clear knowledge and understanding of sequence and physical processes.

Question 4(a)

As with the other 1-mark 'definition' questions on the paper, this question was poorly answered by many candidates. Many candidates appeared to have no knowledge of what moraine is at all. Some of these may have been candidates who made a rubric error and answered questions in the Glaciation section even though they had not been taught this topic. Other candidates had some idea that it involved sediment but often referred to it being transported by the glacier rather than being deposited.

4 A variety of processes shape glaciated upland landscapes.

(a) Define the term **moraine**.

(1)

Moraine is material that gets carried by the glacier as it travels downhill.



This response was awarded 0 marks. The candidate has suggested that moraine is the material being transported rather than deposited by a glacier which is incorrect.

4 A variety of processes shape glaciated upland landscapes.

(a) Define the term **moraine**.

(1)

Made up of till deposited by a glacier.



This response was awarded 1 mark. The candidate has given a clear definition (1).

Question 4(b)

This 2-mark 'suggest' question required the candidates to use evidence from the figure to help explain how the truncated spur in the figure had been formed by a glacier. One mark was reserved for this AO3 element which could have included identifying a feature of the truncated spur (eg a steep cliff or an overhang) or for identifying the role of erosion/a named glacial erosional process which may have formed this spur. Many candidates gained this mark, which was pleasing to see, but some then struggled to develop their answers further. They could, for example, have explained how the identified process worked. Another route to the second mark would have been to identify a piece of evidence relating to a characteristic of the spur (AO3 mark) and then identified an erosional process which might have led to its formation.

(b) Study Figure 4a in the Resource Booklet.

Suggest **one** way that a glacier has led to the formation of this truncated spur.

You **must** use evidence from Figure 4a in your answer.

(2)

The use of abrasion has broken down this
truncated spur leaving it in the formation
in 4a



This response was awarded 1 mark. The candidate has identified the role of erosion (1) but there is no further development of this process or a link to a characteristic of the truncated spur.

(b) Study Figure 4a in the Resource Booklet.

Suggest **one** way that a glacier has led to the formation of this truncated spur.

You **must** use evidence from Figure 4a in your answer.

(2)

in figure 4a we can see the truncated spur has a steep drop.
This was because it was once an interlocking spur that had
a glacier ^{move} ~~balldoze~~ through it, eroded everything in
its path.



This response was awarded 2 marks. The candidate has identified the steep sided rock (1) and has then linked this to the erosional power of a glacier (1).

Question 4(c)

The command word for this question was 'state'. This required candidates to recall a piece of information in relation to the question. It was only a 1 mark question and candidates were not required to develop their answer beyond giving the reason. Some candidates wrote several sentences for their answer which was not necessary. In the case of this question they needed to state a reason why freezing and thawing of water can cause weathering. Some answers simply stated that this is because water freezes which was not awarded a mark as it did not go beyond what was written in the question.

(c) State **one** reason why the freezing and thawing of water can cause weathering.

(1)

Because it seeps into rock cracks then it freeze
and split the rock



This response was awarded 0 marks. Although the candidate has identified that freezing water splits the rock they have not given the mechanism which causes this.

(c) State **one** reason why the freezing and thawing of water can cause weathering.

(1)

when water enter the cracks it freezes and expands, this weathers the rock away, breaking it.



This response was awarded 1 mark. The candidate has identified that water expands when it freezes (1).

Question 4(d)

In Q04(d), candidates could have included evidence extracted from the map (eg locating drumlins using grid references; describing the direction of glacial movement and its relationship to the orientation of the drumlins; measuring the dimensions of the drumlins) and from the photograph (eg describing the main features of the drumlins). The information in the text boxes provided a start for some candidates who otherwise struggled with this question. They would have been awarded at least a mark for the AO4 elements if they developed the information in the text boxes slightly.

In relation to the AO3 marks, the candidates were required to explain the role of both erosional and depositional processes in the formation of the drumlins in the figures. While many candidates were able to describe some features of the drumlins and had some idea that deposition was involved many candidates were less clear about why the glacier deposited its load and the role of subsequent glacial readvancement in the streamlining of the smoother downstream side of the drumlin. Some candidates were clearly confused with the formation of roche moutonees and while some of the processes in these answers were relevant they were, inevitably, limited. However, there were some outstanding answers which showed a clear understanding of the role of both erosional and depositional processes in their formation and used evidence from the figures really well to explain the formation of the drumlins shown in the figures rather than just providing a 'textbook' answer.

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

Examine the role of physical processes in the formation of these drumlins.

You **must** use evidence from Figures 4b and 4c in your answer.

(8)

These drumlins were formed due to deposition, and abrasion. Firstly, the glacier would have had to accumulate sediment, via plucking and abrasion, earlier on in its journey. Then, it would have encountered and moved over some small mounds in the valley pictured in Fig 4c. We know this is a valley due to the compact contour lines at (513,126) and (524,103).

As the glacier passed over these mounds, it would have deposited some of its sediment over them, as it would not have been able to erode away at them. The pattern or the shape of drumlins corresponds to the path of the glacier that formed them, as seen in Fig 4c, where the glacier was moving North East, and so the drumlins are angled to indicate this.

Finally, as the glacier deposited more and more sediment over these drumlins, ~~the~~ they could have continued to get larger and larger, forming the hills seen in Fig. 4b.



This response was awarded Level 2 – 4 marks. The candidate has included a limited range of evidence from the figures. This includes using contour lines to identify the fact that some of the drumlins were formed in a valley and providing the direction of travel of the glacier. They have some idea of the processes involved in their formation but the sequence of their formation is not developed and their explanation does not go much beyond identifying the role of deposition.



Make sure you use a range of evidence from the figures in both the 8-mark questions you answer. Where OS maps are provided, this could include using grid references; measuring distance and direction and using contours to interpret the relief.

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

Examine the role of physical processes in the formation of these drumlins.

You **must** use evidence from Figures 4b and 4c in your answer.

(8)

The first step in the formation of drumlins seen in 4b and 4c is the collection of material. As freeze thaw weathering occurs up the valley at 505100 and beyond, material (scree) is dropped onto the glacier and sinks through the snow and ice to take part in sub glacial (active) transport where it is pulled along as the glacier 'glazed over the landscape' (4b) and transported as mass movement. This material makes up the moraines. Also, plucking occurs along the valley to gather additional rock for drumlins.

The second step is the deposition of this glacial till. As the glacier enters the Ablation zone (which Figure 4c and 4b are in), there is a net decrease in the glacier's mass and it begins to melt. This means the material is no longer being carried and gets deposited in large groups on the ground as terminal or lateral (or ground) moraines. These can be seen in 4c at 505113 and 520110 and at the right end of Figure 4b. These are 200 metres long and face in the direction of the glacier flow.

The final step in the drumlin formation is the build up over time of deposited material. As global temperatures rise, the ice melts in large quantities. This means the glacier cannot continue to flow with the carried material and deposits it in large amounts as seen in Figure 4c and 4b, where 4b says 'large numbers of drumlins are often found together'. This results in landforms known as swarms of drumlins that have had grass grow over and conceal the deposited till.

In conclusion, ~~some~~ drumlins are formed by 'erosion' supplying material and the 'deposition' of this material (4b) over time and repeated to create swarms of pronounced drumlins of landforms seen in arctic glacial landscapes across the country and specifically in the centre of 4b.



This response was awarded Level 3 – 8 marks. The candidate has included a range of evidence from the figures (eg using grid references to locate some drumlins; measuring their length; linking their orientation to the direction of glacial movement). They have used this information well to support their explanation of the processes and sequence involved in the formation of the drumlins.

Question 5(a)ii

This 2-mark 'explain' question required the candidates to explain why less heat is received at the poles than the equator. While many candidates were able to show that they knew that the incoming solar energy is more concentrated at the equator, some were unable to explain why this was the case - in terms of the curvature of the earth's surface. A significant proportion of candidates suggested that the reason is due to the relative distance to the sun which is incorrect.

(ii) Explain **one** reason why less heat is received at the poles than at the equator. (2)

Axial tilt- the poles are tilted away from the sun, so solar radiation isn't as concentrated as in the equator



This response was awarded 1 mark. The candidate has identified that the sun's energy is less concentrated at the poles (1) but the reason they have given, linked to axial tilt, is incorrect.

(ii) Explain **one** reason why less heat is received at the poles than at the equator.

(2)

At the equator the sun's rays are more concentrated than at the poles due to the curvature of the earth therefore more energy is received at the equator than the poles



This response was awarded 2 marks. The candidate has identified that the sun's energy is more concentrated at the equator (1) and has linked this to the curvature of the earth (1).

Question 5(b)

This 1 mark question required candidates to name an ocean current. A wide variety of possible answers were awarded a mark.

secretarily 10/10/10
(b) Name **one** ocean current.

(1)

North Atlantic Drift



This response was awarded 1 mark. A named ocean current is given (1).

Question 5(c)

This 3-mark 'explain' question required the candidates to identify one way that the prevailing wind affects the UK's climate. A mark was awarded for identifying a characteristic of the prevailing wind (eg its direction; place of origin; temperature or moisture content). The further two marks were awarded for developing their 'chain of explanation' making links between their initial characteristic and how this affects the climate of the UK. For example, candidates were awarded three marks if they stated that 'the prevailing wind arrives from the south west (1) picking up moisture over the Atlantic Ocean (1) which leads to higher rainfall on the west coast of the UK (1)'. In terms of the prevailing wind, it was accepted that although the UK's prevailing wind across the year as a whole is from the south-west, the direction can vary over time and other directions were credited.

(c) The UK has a distinct climate.

Explain **one** way the prevailing wind affects the climate of the UK.

(3)

The prevailing wind is mainly in the south-west direction and picks up moisture from the sea leading to warmer temperatures in the south-west of the UK.



This response was awarded 2 marks. The candidate has identified that the prevailing wind is mainly from the south-west (1). They have gone on to identify two separate development points (picking up moisture and warmer temperatures in the south-west) but as these are not clearly linked a maximum of 2 marks was awarded for this answer.

(c) The UK has a distinct climate.

Explain **one** way the prevailing wind affects the climate of the UK.

(3)

The prevailing wind comes most commonly from the south west, carrying moisture from across the ocean, leading to increased rainfall ^{in the SW}, as the moisture condenses, forming clouds.



This response was awarded 3 marks. The candidate has identified the prevailing wind coming from the south-west (1) carrying moisture from the ocean (1) leading to increased rainfall in the south-west (1).



In 'explain one' questions which are worth three marks, identify a valid factor or reason for the first mark and then make two further explanatory points to gain the additional two marks.

Question 6(a)

This question required the candidates to state two pieces of evidence for natural climate change. As the command word is 'state' the candidates did not need to develop their point through explanation. Although 'temperature records' was awarded a mark, 'increasing temperatures' was not as the question was asking for details of the actual source of evidence.

6 The global climate is changing due to both human and natural reasons.

(a) State **two** pieces of evidence for natural climate change. (2)

1 Ice bubbles

2 Tree rings



This response was awarded 1 mark. A mark was awarded for tree rings (1) but 'ice bubbles' was unclear so a mark was not awarded.



Where the command word is 'state', a short answer should be provided and further explanation is not required.

6 The global climate is changing due to both human and natural reasons.

(a) State **two** pieces of evidence for natural climate change.

(2)

1 ice cores

2 tree rings



This response was awarded 2 marks. The two marks were awarded for ice cores (1) and tree rings (1).

Question 6(b)i

In this question, candidates were required to calculate the range of solar energy shown in the figure. The way the calculation questions are being marked has changed this year with two marks being awarded even if workings are not shown. Candidates are still encouraged to show their workings, however, in case they give the wrong answer (eg they give the answer to the wrong number of decimal places) and a mark will still be awarded if the workings are correct.

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

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

Answer to **one** decimal place.

You **must** show your working in the space below.

(2)

$$1361.4 - 1360.1 = 1.3$$

..... 1.3 watts per m²



This response was awarded 1 mark. Although the final answer is incorrect, the workings are correct. They have misread the graph but because the numbers they have used are on the graph this was awarded a mark as it shows they understand the calculation method.

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

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

Answer to **one** decimal place.

You **must** show your working in the space below.

(2)

$$1361.3 - 1360.1$$

..... 12 watts per m²



This response was given 2 marks. The answer is correct (2).



Make sure you check any requirements relating to how the final number should be given - eg either as a whole number or to a certain number of decimal places.

Question 6(b)ii

This 2-mark 'suggest' question required the candidates to use evidence from the figure to suggest how the variation in solar energy shown on the graph could be linked to changes in global temperatures. One mark was reserved for the AO3 element which could have included using data from the graph to show variations in the amount of solar energy. The second mark was then awarded for making a link to possible changes in the global temperature. It is important to note that candidates are guided to using evidence from the resource in the question where it is required to be used.

- (ii) Suggest **one** way the variation in solar energy might have affected global temperatures between 1620 and 1720.

You **must** use evidence from Figure 6a in your answer.

(2)

The solar energy in 1640 was high then
in 1650 it started to decrease



This response was awarded 1 mark. The candidate has identified changes in the amount of solar energy shown on the figure (1) but has not made the link to possible changes to the global temperature.

- (ii) Suggest **one** way the variation in solar energy might have affected global temperatures between 1620 and 1720.

You **must** use evidence from Figure 6a in your answer.

(2)

The variation in solar energy may have caused a cooler climate from 1660 to 1700 as that was the lowest solar energy output with only $1360.1 \text{ watts per m}^2$.



This response was awarded 2 marks. The candidate has identified the low solar energy between 1660-1700 (1) and has then made a link to the possible cooling of the global climate during this period (1).

Question 6(c)i

In this question, candidates were required to calculate the percentage increase in the amount of methane between 2010 and 2022. The way calculation questions are being marked has changed this year with two marks being awarded even if workings are not shown. Candidates are still encouraged to show their workings, however, in case they give the wrong answer (eg they give the answer to the wrong number of decimal places) and a mark will still be awarded if the workings are correct.

(c) Methane is a greenhouse gas.

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

Calculate the percentage increase in the amount of methane in the atmosphere between 2010 and 2022 shown in Figure 6b.

Answer to **one** decimal place.

You **must** show your working in the space below.

(2)

~~1.8 - 1.91~~

$$\frac{1.91 - 1.8}{1.8} \times 100 = 6.1$$

1.8
 $10\% = 0.18$
 $1\% = 0.018$
 $0.018 \times 6 = 0.108$
 $1.8 + 0.108 = 1.908$

6 %



This response was awarded 1 mark. The candidate has given the wrong answer (not to 1 decimal place) but has been awarded a mark for their workings which are correct.



Although workings are no longer required to gain full marks on calculation questions, it is very good practice to give them. This is, in part, because even if you give the wrong final answer (eg not to the required number of decimal places) you may still gain a mark for your workings.

(c) Methane is a greenhouse gas.

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

Calculate the percentage increase in the amount of methane in the atmosphere between 2010 and 2022 shown in Figure 6b.

Answer to **one** decimal place.

You **must** show your working in the space below.

(2)

$$1.91 - 1.80 = 0.11$$

$$\frac{0.11}{1.80} \times 100 = 6.111$$

6.1 %



This response was awarded 2 marks. The candidate has given the correct answer - including to the required number of decimal places (1).

Question 6(c)ii

The command word for this question was 'state'. This required candidates to recall a piece of information in relation to the question. It was only a 1 mark question and candidates were not required to develop their answer beyond giving the reason. In the case of this question they needed to state a reason for the increase in the amount of methane in the atmosphere. Most candidates who were awarded a mark identified cattle farming as their reason. Candidates who gave 'agriculture' as their answer were not awarded a mark as this was not specific enough as it is rice/livestock farming which is responsible for the increased methane emissions.

(ii) State **one** reason for the increase in the amount of methane in the atmosphere. (1)

Cattle Farming



This response was awarded 1 mark. Cattle farming (1) was given which is a correct reason.

(ii) State **one** reason for the increase in the amount of methane in the atmosphere. (1)

Agriculture etc



This response was awarded 0 marks. This was not awarded a mark as 'agriculture' is not specific enough as it is rice/ livestock farming, rather than all types of agriculture, which is responsible for the increased methane emissions.

Question 6(d)ii

The command word for this question was 'state'. This required candidates to recall a piece of information in relation to the question. It was only a 1 mark question and candidates were not required to develop their answer beyond giving the reason. Some candidates wrote several

sentences for their answer which was not necessary. In the case of this question they needed to state a reason why some tropical cyclones lead to more deaths than others.

(ii) State **one** reason why some tropical cyclones lead to more deaths than others.

(1)

stronger winds.



This response was awarded 1 mark. The wind strength is a valid reason (1).

(ii) State **one** reason why some tropical cyclones lead to more deaths than others.

(1)

Some are more destructive than others



This was awarded 0 marks. A mark was not awarded for this answer as it does not actually say why some storms are more destructive than others.

Question 6(e)

This question required candidates to explain two responses to tropical cyclones shown in the two photographs. The marks for this question were divided between two AO2 marks and two AO3 marks. The AO3 marks were reserved for the candidates being able to identify responses from the resource. The AO2 marks were awarded for further development through explanation. This could have involved them further developing how the identified response would have helped people to recover from the tropical cyclone (eg 'water is provided (1) so that people don't drink contaminated water' (1) or 'buildings are raised on stilts (1) to make them less vulnerable to flooding in future cyclones' (1)).

(e) Study Figures 6c and 6d in the Resource Booklet.

Explain **two** responses to tropical cyclones.

You **must** use evidence from Figures 6c and 6d in your answer.

(4)

Figure 6c

a short term response is giving people first aid and necessities such as food and water.

Figure 6d

a long term response is making buildings out of stronger material, and taller



This response was awarded 2 marks. Figure 6c - although they have identified the provision of a range of resources (eg food and water) (1) there is no further development so a maximum of 1 mark is awarded for this part of the answer. Figure 6d - a mark was awarded for the use of stronger materials for buildings (1) but there is no further development so a maximum of 1 mark is awarded for this part of the answer.



On questions which are structured like this with two sections to the answer, make sure you write two separate answers rather than combining them under one of the headings.

(e) Study Figures 6c and 6d in the Resource Booklet.

Explain two responses to tropical cyclones

You **must** use evidence from Figures 6c and 6d in your answer.

(4)

Figure 6c

aid from other countries providing things like water to deal with shortages.

Figure 6d

building high on stilts to prevent damage ^{from} ~~the~~ flooding from a cyclone



This response was awarded 4 marks. Figure 6c - Other countries are providing aid (1) such as water to deal with shortages (1). Figure 6d - building high on stilts (1) so prevents damage from flooding (1).



'Explain' nearly always means 'say why'. Make sure your initial point is extended. Use connectives such as 'this means that', 'this is because' or 'so'.

Question 6(f)

The command word for this 8-mark question is 'assess'. This requires candidates to determine the relative significance of something – giving consideration to all the elements being considered and to identify which are the most important. Unlike with the command word 'evaluate', 'assess' questions do not require candidates to write an overall conclusion. This question required candidates to identify the named developed country they were going to write about. They are required to have studied a named example as part of the specification. A small minority of candidates wrote about a developing/emerging country which would have limited their marks significantly.

For the AO2 marks, the candidates were required to describe and explain the different impacts of drought on both people and the environment. Most candidates did consider both these aspects which was pleasing to see. The best answers were the ones which used a paragraph-based structure with each paragraph focusing on a different impact. In the best answers, some detailed and accurate case-study knowledge was used to support their explanation.

As mentioned above, as this is an 'assess' question, candidates are not required to write an overall conclusion. However, if they write one and there is evidence of judgement within it, it is credited. A good approach to ensuring that candidates secure the higher levels for the AO3 elements is to add judgement comments at the end of each paragraph about the relative importance of the elements under consideration.

It is important to note that from the June 2024 series onwards, the 4 marks allocated for the assessment of spelling, punctuation, grammar and use of specialist terminology (SPaG) have been moved to this question from the 8-mark question at the end of Section C. This decision, which was communicated to all centres, was taken because a significant minority of candidates had not been writing anything for the 8-mark question in Section C – and were therefore also not gaining any SPaG marks. This may have been because of time management issues but also because the paper is designed for the level of difficulty to ramp up through the sections and questions.

(f) Assess the impacts of drought on people and ecosystems in a named developed country.

(8)

Named developed country

~~United States of America India~~ USA

~~In the USA, there are many deserts and~~ ^{USA} ~~India~~ is located almost on the equator, meaning it's more prone to drought periods affecting its people and ecosystems.

In terms of people, due to the mass amounts of people there's a higher demand for water and growing crops, however with drought means there's probably not enough, resulting in less crops between produced and therefore a shortage of food for the people.

In terms of ecosystems, droughts mean that plants will die out as they're getting an abundance of heat but little to no water, when plants die, animals who seek shelter in them will have no place to go and will eventually die out from the heat too, however this also affects people as animals dying means there's a shortage in live stock, and ultimately again less food for people to survive on.

However, these drought periods also affect people

economically as shortage in crop yields and livestock means people such as farmers who rely on crop yields and livestock for income are left with nothing, therefore not being able to provide for the local community and their family, ~~off~~ consequently ~~off~~ impacting others since its like a domino effect, they receive less food from farmers.



This response was awarded Level 2 – 5 marks and 3 marks for SPaG. The candidate has identified some relevant impacts but has only included a limited amount of located evidence as supporting material. They have made some attempts to explain the impacts although this is not in great depth. They have made some judgement statements but the AO3 elements are weaker than AO2. In terms of SPaG, the spelling is accurate but there are some punctuation errors. A range of specialist terminology is included.

(f) Assess the impacts of drought on people and ecosystems in a named developed country.

(8)

Named developed country

California. (USA)

Droughts are periods of significantly low rainfall, and they have detrimental effects on ecosystems and people. For example in California, due to the lack of water, there was less irrigation of crops causing crops to fail and yields to reduce by 19%, this caused food shortages and lack of food in supermarkets, also 17,100 farmers lost their livelihoods, becoming unemployed and unable to find other employment causing reduced quality of life. However, this is not as significant as other impacts, as due to California's high economic development (USA) and high food security, there was increased imports of food so few people were at risk of malnutrition. The lack of water also led to water usage limits, perhaps even leading to dehydration and forcing people into hospital and to conserve water. This is not as significant as environmental impacts, but more impactful than the effect on agriculture, as USA increased water abstraction by 15% and already had stores of water to supply due to good preparation because of the NASA's forecasting system. However increased water abstraction from aquifers had negative effects on wildlife, causing some animals and plants to die due to the drop in the water table reducing biodiversity. //

Moreover, the environmental impacts are more significant,

as there were little measures put in place to mediate the impacts, for example, due to dried up vegetation there was more than 12 wildfires destroying 14,000 acres of vegetation, killing animals and plants as well as threatening people's homes. This also released lots of CO₂ into the atmosphere, increasing the rate of global warming. Furthermore, salmon were unable to breed in drying up rivers, causing reduced fishing and population of young salmon, this effect on ecosystems not only affected biodiversity, but the local economy, as less salmon could be sold for profit.

continued.

(Spelling, punctuation, grammar and use of specialist terminology = 4 marks)

(Total for Question 6 = 27 marks)

TOTAL FOR SECTION B = 34 MARKS

In conclusion, ecosystem effects are more significant than effects on people, often because there are less measures in place and that the effects on ecosystems have negative repercussions for people and the economy.



This response was awarded Level 3 – 8 marks and 4 marks for SPaG. The candidate has identified a number of impacts. They have used paragraphs to structure their answer which makes the different impacts clear. They have used specific details from their named example to support their answer. They have included judgements about the relative importance of the impacts through their answer and have included further judgements in their final paragraph. Their SPaG is consistently accurate and they have made good use of specialist terminology.



Including located information is useful to support your answer – moving away from a 'generic' response that could apply to any named country.

Question 7(a)ii

This 3-mark 'explain' question required the candidates to use evidence from the figure to explain one way climate influences in the location of deserts. The first mark (AO3) was reserved for identifying the location of deserts from the figure. The remaining two marks (AO2) were awarded for explanation of this location. While the majority of deserts on the map are along the tropics, there were some isolated examples on or near the equator. While the deserts along the tropics are linked to the descending limbs of the Hadley and Ferrell cells leading to the creation of high pressure at the surface, the existence of deserts near the equator is linked largely to the impact of the rain shadow effect. While most candidates approached their answers by explaining why deserts were found in the location they had identified, it was also valid to explain why climate characteristics mean that deserts are not found in particular locations.

(ii) Explain **one** way climate influences the location of deserts.

You **must** use evidence from Figure 7a in your answer.

(3)

An arid ^{and dry} climate will influence the location of a desert, for example, in the tropics of cancer, which is just above the equator, which ~~is~~ is dry and hot, is where most of the deserts are located.



This response was awarded 2 marks. The candidate has identified that deserts are located along the Tropic of Cancer (1) and has linked this to arid/dry conditions (1). However, there is not any further development so the third mark was not awarded.

(ii) Explain **one** way climate influences the location of deserts.

You **must** use evidence from Figure 7a in your answer.

(3)

Most ~~best~~ deserts are located on the Tropic of Cancer and Capricorn where the Hadley and Ferrel cells ~~meet~~ meet, creating high pressure that creates arid conditions.



This response was awarded 3 marks. The candidate has identified deserts as being located along the tropics (1) and has then explained this in terms of high pressure (1) creating arid conditions (1).



When answering resource based figures, make use of the labelling on the resources. In this case, making use of the names of the Tropic of Cancer and Tropic of Capricorn would have been useful.

(ii) Explain **one** way climate influences the location of deserts.

You **must** use evidence from Figure 7a in your answer.

(3)

~~A~~ High pressure along the tropics. So air sinks and there is little to no rainfall.
~~This is seen in~~ These are the best conditions for deserts to form as seen in
figure 7A where most deserts are located 30° N/S of the equator
with the exception of South America's being on the equator



This answer gained 3 marks.

Question 7(b)i

In this question, candidates were required to calculate the area of moorland in the UK using the percentage of moorland and the total area of the UK. The way calculation questions are being marked has changed this year with two marks being awarded even if workings are not shown. Candidates are still encouraged to show their workings, however, in case they give the wrong answer (eg they give the answer to the wrong number of decimal places) and a mark will still be awarded if the workings are correct. In this question, although the correct answer was a whole number, the candidates were required to give their answer to one decimal place. Many candidates did not follow this instruction and lost a mark as a result.

Moorland is an example of a UK terrestrial ecosystem.

(b) Study Figure 7b below.

The total area of the UK is 244,000 km².

The percentage of the UK's area which is moorland is 10.3%.

Figure 7b

Land use data for the UK

(i) Use the data in Figure 7b to calculate the area of moorland in the UK.

Answer to **one** decimal place.

You **must** show your working in the space below.

$$\begin{aligned} 10.3\% &\rightarrow 0.103 & (2) \\ 0.103 \times 244000 &= 25132 \end{aligned}$$

..... 25132 km²



This response was awarded 1 mark. The candidate was not awarded 2 marks because they did not give their answer to one decimal place as required by the question. They were awarded one mark for correct workings.



Make sure you check all the instructions in the question carefully - including the number of decimal places which you may be required to provide.

Moorland is an example of a UK terrestrial ecosystem.

(b) Study Figure 7b below.

The total area of the UK is 244,000 km².

The percentage of the UK's area which is moorland is 10.3%.

Figure 7b

Land use data for the UK

(i) Use the data in Figure 7b to calculate the area of moorland in the UK.

Answer to one decimal place.

You **must** show your working in the space below.

(2)

$$244000 \times 0.103 = 25132$$

25132.0 km²



This response was awarded 2 marks. The candidate has given the correct answer - including to the required number of decimal places.

Question 7(b)ii

This 1 mark question required candidates to name a terrestrial ecosystem other than the one (moorland) already given. Some candidates gave 'moorland' as their answer which was not awarded a mark.

(ii) Name one other terrestrial ecosystem in the UK.	(1)
moorlands	



This response was awarded 0 marks. Although 'moorland' is an example of a terrestrial ecosystem in the UK, this was not awarded a mark as the question asked candidates to name 'one other' example - and moorlands is the ecosystem which was already part of Q07(b).

(ii) Name one other terrestrial ecosystem in the UK.	(1)
heathlands	



This response was awarded 1 mark. Heathlands (1) is a correct answer. They would also have been awarded a mark if they had written 'heaths'.

Question 7(c)

This 2-mark 'explain' question required the candidates to identify one way that plants are adapted to the tropical rainforest environment. Most candidates were able to gain this mark. In order to gain the second mark candidates needed to be able explain this adaptation further. For example, 'buttress roots (1) help keep the tall trees stable (1)' or 'drip tips (1) allow leaves to shed water quickly (1)'. Some candidates focused their answers on describing the environment in the tropical rainforest rather than explaining an adaptation and were not awarded marks.

Tropical rainforests have a high biodiversity.

(c) Explain **one** way plants have adapted to the environment in tropical rainforests.

(2)

Drip-tip leaves have a wide surface area and small end so
water droplets can flow off without breaking the leaf



This response was awarded 2 marks. This candidate has identified drip tip leaves (1) as their adaptation and has gone on to explain that these allow 'water droplets to flow off' (1). They have a further development point in terms of 'without breaking the leaf' but they had already achieved full marks.



In 'explain one' questions which are worth two marks, identify a valid factor or reason for the first mark and then make one further explanatory point to gain the additional mark.

Tropical rainforests have a high biodiversity.

(c) Explain **one** way plants have adapted to the environment in tropical rainforests.

(2)

Trees have buttress roots which
are wide so that they can
absorb nutrients from the soil.



This response was awarded 1 mark. The candidate had identified buttress roots as a valid adaptation (1) but their development point in terms of absorbing nutrients from the soil is incorrect in relation to the role of buttress roots.

Question 7(d)

This 3-mark 'explain' question required the candidates to identify one way that climate change threatens the biodiversity of tropical rainforests. The initial mark was awarded for identifying a way that climate change may threaten biodiversity (eg warmer/colder or wetter/drier). Most candidates were able to gain this mark. Candidates who scored two or three marks were able to develop their 'chain of explanation' making links between this initial change and the resulting threat to biodiversity. For example, candidates were awarded three marks if they stated that 'climate change can lead to higher temperatures (1) which some plants cannot adapt to quickly enough (1) so they may die out (1)'. If a candidate identified two or more reasons, the section of their response with the most linked explanation points was the one which was credited.

(d) Explain **one** way climate change threatens the biodiversity of tropical rainforests.

(3)

The constant increase in temperature would lead to some species being unable to survive. This would threaten the biodiversity as it could lead to a decrease in it.



This response was awarded 2 marks. The candidate has identified that climate change is leading to increased temperatures (1) which means that species may not be able to survive (1). However, there is not any further development so a maximum of two marks was awarded.

(d) Explain **one** way climate change threatens the biodiversity of tropical rainforests.

(3)

climate change increases the global temperature. This can lead to forest fires. Forest fires will cause deaths of animals, habitat loss and animal migrate which all decrease biodiversity as a result



This response was awarded 3 marks. The candidate has identified that climate change is leading to higher temperatures (1) which may lead to forest fires (1) resulting in the death of animals (1).



Make use of linking words in your answers such as 'because', 'therefore' or 'so'. These are helpful in 'explain' questions because they identify that one thing leads to another.

Question 7(e)i

This question required candidates to identify the year with the largest tropical rainforest loss. The vast majority of candidates got this question right. A very small number of candidates gave the amount of rainforest which was lost in that year. This was only awarded a mark if they also gave the year in their answer.

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

(i) Identify the year with the largest tropical rainforest loss in Brazil. (1)

28,300



This response was awarded 0 marks. The candidate has given the amount of forest loss in 2016 and not the year.

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

(i) Identify the year with the largest tropical rainforest loss in Brazil. (1)

2016



This response was given 1 mark. The correct answer has been given.

Question 7(e)ii

In this question, candidates were required to calculate the mean annual tropical rainforest loss using the eight figures in the table. The way the calculation questions are being marked has changed this year with two marks being awarded even if workings are not shown. Candidates are still encouraged to show their workings, however, in case they give the wrong answer (eg they give the answer to the wrong number of decimal places) and a mark will still be awarded if the workings are correct. In the case of this question, if candidates had given the wrong answer (eg not to one decimal place) the candidates had to show that they had added up the numbers and divided by 8 to be awarded the workings mark.

(ii) Calculate the mean annual tropical rainforest loss between 2015 and 2022.

Answer to **one** decimal place.

You **must** show your working in the space below.

(2)

$$135,190 \div 8$$

$$16898.7 \text{ km}^2$$



This response was awarded 1 mark. The answer provided by the candidate is incorrect but their workings are correct (1). The candidate has not rounded their final answer up correctly.

(ii) Calculate the mean annual tropical rainforest loss between 2015 and 2022.

Answer to **one** decimal place.

You **must** show your working in the space below.

(2)

$$\begin{array}{r} 8290 \\ + 28300 \\ + 21300 \\ + 13500 \\ + 13600 \\ + 17000 \\ + 15500 \\ + 17700 \\ \hline 135190 \end{array}$$

$$135190 \div 8 = 16898.8$$

$$16898.8 \text{ km}^2$$



This response was awarded 2 marks. The answer given is correct (2).

Question 7(f)

This 3-mark question required the candidates to explain one reason for deforestation in tropical rainforests. The initial mark was awarded for identifying a valid reason and most candidates were able to gain this mark. Candidates who scored two or three marks were able to develop their 'chain of explanation' further developing their reason for deforestation. For example, candidates were awarded three marks if they stated that 'land is being converted to farmland (1) with crops being planted (1) which are being used to feed a growing population' (1). If a candidate identified two or more reasons, the section of their response with the most linked explanation points was the one which was credited.

(f) Explain **one** reason for deforestation in tropical rainforests.

(3)

Deforestation could be caused by humans chopping down trees for timber to use as a resource for firewood or building materials.



This response was awarded 2 marks. The candidate has identified that forests are being cut down to provide timber (1) which is being used as firewood/building material (1). Note that although they have written two ways timber is being used this is only credited as one mark for development.

(f) Explain **one** reason for deforestation in tropical rainforests.

(3)

~~Deforest Pop~~ Rising demand for food has caused deforestation to create arable and pastoral farms to meet the demand.
Rising demand for food is usually due to an increasing population.



This response was awarded 3 marks. The candidate has identified that farms are being developed (1) due to a rising demand for food (1) caused by an increasing population (1).

Question 7(g)i

This 1 mark question involved identifying the largest nutrient store shown in the nutrient cycle (Gersmehl) model for an area of deciduous woodland. The command word for the question was 'name' so a one word answer was all that was required.

(g) Deciduous woodlands show a range of features.
Study Figure 7d in the Resource Booklet.
(i) Identify the largest nutrient store. (1)

Soil



This response was awarded 0 marks. The candidate has given an incorrect answer.

(g) Deciduous woodlands show a range of features.
Study Figure 7d in the Resource Booklet.
(i) Identify the largest nutrient store. (1)

Biomass



This response was awarded 1 mark. The candidate has given biomass (1) as their answer which is correct. While most candidates were able to spell biomass correctly some misspelt it (eg only writing one 's'). These answers were given a mark.

Question 7(g)ii

This 3-mark 'explain' question required the candidates to use evidence from the figure to explain one impact of deforestation on the nutrient cycle in deciduous woodlands. One mark was reserved for the AO3 element which involved identifying a change from the diagram (eg less leaf-fall). The remaining two marks were awarded for further development of this initial impact. Many candidates continued to use the figure, making further reference to other changes in the cycle as a result of this initial change which was completely valid.

(ii) Explain **one** impact of deforestation on the nutrient cycle in deciduous woodlands.

You **must** use evidence from Figure 7d in your answer.

(3)

When deforestation happens there is less trees
so less leaf-fall which would make the size
of the litter decline as less leaves are added to
it



This response was awarded 2 marks. The candidate has identified from the figure that deforestation will lead to less leaf-fall (1) and that this will lead to the size of the litter (store) shrinking (1). They have not, however, developed a further link in their 'chain of explanation' so a third mark was not awarded.

(ii) Explain **one** impact of deforestation on the nutrient cycle in deciduous woodlands.

You **must** use evidence from Figure 7d in your answer.

(3)

Deforestation of trees will reduce the biomass store which will mean less leaf fall, as shown in 7d. This means that the litter store will be less so less decomposition will occur, as shown in 7d. This also means that the soil store will be smaller and so less nutrients will be transferred to biomass by uptake.



This response was awarded 3 marks. The candidate has identified that the biomass store will get smaller (1) which means less leaf-fall (1) and a smaller litter store (1). They have made a further linked point but as they have already achieved full marks these do not gain them any additional marks.



If the question asks you to use evidence from the resource, make sure that you do so.

Question 7(h)

As with Q06(f), the command word for this question was 'assess'. This requires candidates to determine the relative significance of something – giving consideration to all the elements being considered and to identify which are the most important. Unlike with the command word 'evaluate', 'assess' questions do not require candidates to write an overall conclusion. This question required candidates to identify the named region of deciduous woodland they were writing about. They are required to have studied a named example as part of the specification. A small minority of candidates wrote about a region of tropical rainforest which would have limited their marks significantly.

For the AO2 marks, the candidates were required to explain how different approaches have been used to sustainably manage a region of deciduous woodland. While there was some located detail this was often lacking in many answers which were often quite generalised, even where a named region had been given at the start of the question. The best answers were the ones which used a paragraph-based structure with each paragraph focusing on a different approach.

In relation to the AO3 elements, the best answers made use of judgement comments at the end of each paragraph where they qualified the importance and/or scale of the causes. In terms of 'assess' we are really looking for candidates to rank the different approaches to identify which is the most to least important and to be able to support this judgement with evidence. While an overall conclusion is not required with an 'assess' question it can be used to help rank the relative importance. Making qualifying judgements about their importance (eg 'more significant', 'greater success') is also a valid way to approach the AO3 elements.

(h) Assess the success of the different approaches to the sustainable management of deciduous woodlands in a named region.

(8)

Named region

The New Forest

There are various methods of tackling the sustainable management of deciduous woodlands. One is making use of electric tour buses that reduce emissions of greenhouse gases such as carbon dioxide and methane. These tour buses also allow tour guides to educate and inform people on how to respect the woodlands and limit harm done to them. Another method is creating footpaths so that people do not trample over and damage habitats and plant life. The success of both of these methods is arguable as people may not listen or abide fully by the rules and regulations.

Also, there are areas of the woodland that are not available to the general public to ensure the safety of certain animals and plants.





This response was awarded Level 2 – 4 marks. The response is focused on the question and the candidate has provided a valid named region of deciduous woodland. There are some examples of approaches being used but there is only limited located detail. There is some explanation of how the approaches are being implemented but only limited judgements.

(h) Assess the success of the different approaches to the sustainable management of deciduous woodlands in a named region.

(8)

Named region ~~Epping Forest~~

UK, Epping Forest

One approach is pollarding which is when the branches of trees are cut off to shoulder height while the actual tree isn't fully cut off. A ~~possi~~ positive of this approach is that the trees aren't cut from their roots which means they are conserved. However, a negative is that the branches are open to infections which means they could get diseases. As a result, the trees could die. ~~even~~ this approach is quite successful because it conserves the trees.

Another approach is removing invasive species. This is when people pick out invasive species such as the Himalayan Balsam ^{from} ~~by~~ their roots. A positive of this is that invasive species are removed which allows ~~na~~ native species to access the sunlight. A negative is that it is very time consuming & they can go back. This means ~~that~~ there would be less volunteers to help. This approach is less successful because there would be less volunteers if they are going to grow back and because it's time consuming.

The third approach is the BS1's status. This means 2/3

of the land is not accessible unless allowed by the government for research. A positive of this is that 2/3 of the land is preserved meaning no harm can be done & it can be used by future generations. A negative of this is that 1/3 of the land is at risk as it's not protected. This means it could be deforested. ^{This} approach is quite successful because 2/3 of the land is protected.

(Total for Question 7 = 30 marks)

TOTAL FOR SECTION C = 30 MARKS

TOTAL FOR PAPER = 94 MARKS

Overall, I think the most successful approach is pollarding because the trees aren't fully cut down and there is only a minor chance that they will get a disease. Therefore, I think the most successful approach is pollarding.



This response was awarded Level 3 – 8 marks. The response is clearly focused on the question and has used paragraphs to structure the answer. A range of approaches is identified and these are well explained. There is good supporting evidence, including some located detail, and a range of key terms is included. Judgements about the relative importance of the causes have also been included so this is a real strength of this answer.



Make sure that you make judgements about the relative importance of the impacts you are writing about through your answer. This could include a sentence at the end of each paragraph as well as a final concluding paragraph.

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 the specification.
- Candidates should be reminded that 'assess' questions require evidence to determine the relative importance of the reasons/factors under consideration in the question. While they do not require an overall concluding paragraph, candidates need to make judgements about the relative importance of the reasons/ factors through their response.
- These questions also often require candidates to include case study knowledge in their answers with questions often being worded to focus on specific locations or types of environment.
- In the 'examine' questions in Section A, candidates must use evidence from the figures in their answers rather than simply repeating what they have learnt and revised. The information extracted from the resources should be used to support the answers.
- There will always be questions which 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 give their answer to one decimal place, it is important that they do so.
- Developed points are needed on 2 or 3 mark 'explain' questions. This should include making an initial point in response to the question which should then be developed through the 'chain of explanation'. Only the most well-developed point and its links will be credited. If a candidate makes several points, each of which are not developed, this may limit the mark they are awarded.
- There are some 'explain' and 'suggest' questions which require candidates to use a resource. They should ensure that their answers to these questions include evidence from these resources to gain the AO3 marks.
- Ensure that candidates read each question carefully and whilst the command word is important, make sure that candidates also focus on other words in the question.
- Candidates should be given plenty of practice with resource-based questions in their exam preparations.
- The latest version of the specification is version 4 and this is the one which should be used.
- Centres are encouraged to use the past papers (from 2018-2025), Sample Assessment Materials (SAMs) and specimen papers to help familiarise candidates with the structure of the paper and question types – including the tackling of the 8-mark extended open response questions. Centres should spend time reviewing the examples in this report, and other support materials via the qualification page on the Pearson website. This will help candidates become more familiar with the range of command words and how they are attached to different Assessment Objectives

Grade boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:
<https://qualifications.pearson.com/en/support/support-topics/results-certification/grade-boundaries.html>

