

Final



**General Certificate of Secondary Education  
January 2013**

**Geography B**

**40352H**

**(Specification 4035)**

**Unit 2: Hostile world (Higher)**

**Final**

***Mark Scheme***

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Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all examiners participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for standardisation each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, examiners encounter unusual answers which have not been raised they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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## **GENERAL GUIDANCE FOR GCSE GEOGRAPHY ASSISTANT EXAMINERS**

### **Quality of Written Communication**

Where candidates are required to produce extended written material in English, they will be assessed on the quality of written communication.

Candidates will be required to:

present relevant information in a form and style that suits its purpose;  
ensure that text is legible and that spelling, punctuation and grammar are accurate;  
use specialist vocabulary where appropriate.

### **Levels Marking – General Criteria**

Where answers are assessed using a level of response marking system the following general criteria should be used.

Where an answer fails to achieve Level 1, zero marks should be given.

#### **Level 1: Basic**

Knowledge of basic information  
Simple understanding  
Few links; limited detail; uses a limited range of specialist terms  
Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

#### **Level 2: Clear**

Knowledge of accurate information  
Clear understanding  
Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate  
Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

#### **Level 3: Detailed**

Knowledge of accurate information appropriately contextualised and/or at correct scale  
Detailed understanding, supported by relevant evidence and exemplars  
Well organised, demonstrating detailed linkages and the inter-relationships between factors  
Range of ideas in a logical form; uses a range of specialist terms where appropriate  
Well structured response with effective use of sentences. Few spelling, punctuation and grammatical errors.  
Level 3 does not always equate to full marks, a perfect answer is not usually expected, even for full marks.

**ASSESSMENT OF SPELLING, PUNCTUATION AND GRAMMAR (SPaG)**

Spelling, punctuation and grammar will be assessed via two questions in Question 1 and two questions in Question 2. Three marks will be allocated for Spelling, Punctuation and Grammar in each of these questions. The performance descriptions are provided below.

**High performance (3 marks)**

Candidates spell, punctuate and use the rules of grammar with consistent accuracy and effective control of meaning in the context of the demands of the question. Where required, they use a wide range of specialist terms adeptly and with precision.

**Intermediate performance (2 marks)**

Candidates spell, punctuate and use the rules of grammar with considerable accuracy and general control of meaning in the context of the demands of the question. Where required, they use a good range of specialist terms with facility.

**Threshold performance (1 mark)**

Candidates spell, punctuate and use the rules of grammar with reasonable accuracy in the context of the demands of the question. Any errors do not hinder meaning in the response. Where required, they use a limited range of specialist terms appropriately.

**The marks allocated for Spelling, Punctuation and Grammar will achieve a total weighting of 5% of the total marks for the qualification.**

**Annotation of Scripts**

One tick equals one mark, except where answers are levels marked (where no ticks should be used). Each tick should be positioned in the part of the answer which is thought to be credit-worthy.

Where an answer is levels marked the examiner should provide evidence of the level achieved by means of annotating 'L1' or 'L2' in the left-hand margin.

The consequent mark within this level should appear in the right-hand margin.

Ticks must not be used where an answer is levels marked.

Examiners should add their own brief justification for the mark awarded, eg *Just L2, reasonably accurate knowledge or some clear understanding.*

Where an answer fails to achieve Level 1, zero marks should be given.

**General Advice**

Marks for each sub-section should be added in the right-hand margin next to the maximum mark available which is shown in brackets. All marks should then be totalled in the 'box' at the end of each question in the right-hand margin. The totals should then be transferred to the boxes on the front cover of the question paper. These should be totalled. The grand total should be added to the top right-hand corner of the front cover. No half marks should be used.

It is important to recognise that many of the answers shown within this mark scheme are only exemplars. Where possible, the range of accepted responses is indicated, but because many questions are open-ended in their nature, alternative answers may be equally credit-worthy. The degree of acceptability is clarified through the Standardisation Meeting and subsequently by telephone with the Team Leader as necessary.

Diagrams are legitimate responses to many questions and should be credited as appropriate. However contents which duplicate written material or vice versa should not be credited.

Quality of Written Communication (QWC) is part of the award of marks in levels marked answers only. In levels marked answers the quality of the geography is assessed and a level and mark awarded

according to the geography. As is sometimes the case, the geography may be sound at a particular level but the examiner may not be sure as to whether there is quite enough to raise the mark within that level. In this case the examiner should consider the QWC of the answer. QWC that fulfils the criteria for the level should lead to the rise in the mark but where the QWC does not fulfil the criteria, the answer should remain at the mark first thought appropriate. In cases where QWC has been used in the award of marks, the examiner should indicate this with QWC and arrows that indicate either an upward or downward trend according to its impact on the final award of the mark.

**SECTION A**

**Living with Natural Hazards**

<p><b>1(a)</b></p>	<p>2x1 Most tropical storm tracks are north of the equator. All tropical storm tracks start between the Tropics. <i>Could a developed point. Found between 5° - 25° (1) north and south of the equator (1)</i> In narrow belts, close to plate boundaries. <i>Credit named examples when they describe global pattern, not individual examples e.g. in the west tropical storms occur in the Caribbean and in the east they are found in the Indian ocean and in South East Asia. (3 locations) e.g. Many earthquake zones are found along the west of South America, around the Pacific Ring of fire and on the mid Atlantic Ridge (3 locations).</i></p>	<p><b>(2 marks)</b></p>
<p><b>1(b)</b></p>	<p><b>Level 1 (Basic) 1-2 marks</b> <i>If volcanoes / volcanic eruptions chosen = max L1 and credit tectonic processes as for earthquakes</i> Earthquakes: Gives a basic idea of plate movement. Elaboration is very limited. Earthquakes: E.g. <i>Plates moving towards each other. One plate pushed below another. As plates move there are shock waves. Accept "they occur at destructive / conservative / collision / constructive boundaries i.e. must qualify the boundary.</i> Tropical storms: gives a basic idea of process. Elaboration is very limited, e.g. <i>Formed when warm air rises. Form over warm oceans.</i> Wildfires: Gives a basic idea of causes. Elaboration is very limited. <i>E.g. They are caused by drought. They are caused by high temperatures. They are caused by lightning.</i></p> <p><b>Level 2 (Clear) 3-4 marks</b> Gives clear indication of process/cause, linking statements. Earthquakes: E.g. <i>One plate subducted beneath another. As plates move, they snag and tension builds up. A sudden movement sends out shock waves, which cause earthquakes.</i> Tropical storms: e.g. <i>Formed when warm air rises and starts to spin due to the earth's rotation.</i> Wildfires: E.g. <i>A deficiency of rainfall dries out vegetation, so it easily catches fire.</i></p> <p><b>Level 3 (Detailed) 5-6 marks</b> Detailed indication of process/cause. Well linked statements. Earthquakes: E.g. <i>Occur at a destructive plate boundary. Here the oceanic plate is subducted beneath the less dense continental plate as convection currents in the mantle move the plates towards each other. As plates move, they snag and tension builds up, locking like a machine without oil. As the pressure builds up, it is suddenly released and causes a sudden movement that sends out shock waves, which cause earthquakes at the surface.</i> Tropical storms: e.g. <i>Formed over warm oceans where sea surface temperatures are over 27°C. Heating causes evaporation on the surface of the water, warm air rises and starts to spin due to the Coriolis effect.</i> Wildfires: E.g. <i>in areas where temperatures reach as high as 45°C this dries out vegetation so it easily catches fire. This process can be spontaneous. The wildfires are fanned by strong winds of up to 115kph. This is similar to the dry Santa Ana winds which spread wildfires across California in 2009.</i></p>	<p><b>(6 marks)</b></p>

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	<p>Continued development could be case study examples. <i>Credit a breadth of knowledge of causes e.g. 3 clearly explained plate interactions = 5 marks. 4 clearly explained plate interactions = 6 marks.</i></p> <p>Knowledge of accurate information appropriately contextualised and/or at correct scale.</p> <p>Detailed understanding, supported by relevant evidence and exemplars.</p> <p>Well organised, demonstrating detailed linkages and the inter-relationships between factors.</p> <p>Range of ideas in a logical form; uses a range of specialist terms where appropriate.</p>	
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1(c)	<p>3×1</p> <p><i>There is a variation in the heating of the oceans (1)</i></p> <p>Areas of ocean heated less (1) between 0°C and 3°C above 10°N and below above 10°S (1) and 3°C to 5°C in Equatorial regions (1). The exception is the Arctic Ocean which could increase in temperature by 4°C (1).</p>	<b>(3 marks)</b>
1(d)	<p><b>Level 1 (Basic) 1-3 marks</b></p> <p>Simple, undeveloped statements.</p> <p>Tropical storms: E.g. <i>There could be more storms. There could be stronger storms.</i></p> <p>Wildfires: E.g. <i>There could be more wildfires. There could be bigger wildfires.</i></p> <p><i>Credit descriptions of sea surface temperatures / dryland tentatively linked to an effect at L1. (if there is no simple link to an effect, there is no credit). 'warm seas' need qualification.</i></p> <p><b>Level 2 (Clear) 4-5 marks</b></p> <p>Clear development of the point.</p> <p>Tropical storms: E.g. <i>changes in sea temperatures could cause El Nino type events. There could be more frequent storms or storms could be wider ranging. Smaller storms could combine to form more powerful category 4 and 5 hurricanes. A clear description of sea surface temperature must clearly be linked to an effect e.g. increasing number, frequency, power, distribution.</i></p> <p>Wildfires: E.g. <i>The wildfire season could be extended and there would be more wildfires days, as larger wildfires burn for longer.</i></p>	<b>(5 marks)</b>
<b>Total for Question 1: 16 marks</b>		

2(a)(i)	<p>3×1</p> <p>In the northern counties (1). <i>In a block of 14 countries or clustered (1).</i></p> <p>1 county in south (1). Use of scale / direction from cities (100 km – 400 km in the north and 50 km – 300 km in south) (1).</p>	<b>(3 marks)</b>
2(a)(ii)	<p><b>Level 1 (Basic) 1-3 marks</b></p> <p>Gives a basic idea. Elaboration is very limited. <i>E.g. More housing could be built in the wildland-urban interface. There will be more buildings to catch fire. Accept 'more wildfires' at L1.</i></p> <p><b>Level 2 (Clear) 4-5 marks</b></p> <p>Gives clear ideas, linking statements. <i>E.g. More housing could be built in the wildland-urban interface and this provides more fuel for wildfires. Many homes in the wildland-urban interface are very remote and fire crews would have to travel long distances, or more helicopters and planes would have to be used for water drops.</i></p>	<b>(5 marks)</b>
2(b)	<p>3×1 (or 1+1 for developed points)</p> <p>If tree branches are thinned out and dead leaves are removed (1) there is less fuel for the fire to spread (1). It acts as a fire break (1) as there is nothing to burn (1) and this stops the fire spreading to the house (1) and allows easier access for fire fighters (1).</p> <p><i>Responses must go beyond Figure 4.</i></p>	<b>(3 marks)</b>
<b>Total for Question 2: 11 marks</b>		

<p><b>3(a)(i)</b></p>	<p>3×1 Crossed the Bay of Bengal (1) moving northwards (1) made landfall in Bangladesh on 15<sup>th</sup> November (1) moved across land and tracked NE (1) left Bangladesh 16<sup>th</sup> November (1). <i>If distances used points must be stated (i.e. part of the track)</i></p>	<p><b>(3 marks)</b></p>
<p><b>3(a)(ii)</b></p>	<p><b>Level 1 (Basic) 1-3 marks</b> Gives a basic idea. Elaboration is very limited. States what a storm surge is, or that it will cause flooding, or that heavy rain will make rivers overflow. And/or gives a simple statement damage. <i>E.g. houses flattened by strong winds, crops destroyed by floods, etc.</i> <i>Accept references to 'storm at its most powerful on reaching the coast' high density of population', 'poorly built housing' 'unable to afford cyclone defences'.</i></p> <p><b>Level 2 (Clear) 4-5 marks</b> Clear description of damage with development of ideas. <i>E.g. Land under 5m above sea level is flooded as sea surges inundate the land. The tropical storm was at its strongest when it hit a very densely populated area of the coastline. Bangladesh has many shanty towns which contain shacks that are easily destroyed when subject to very strong winds.</i></p> <p><b>Spelling, Punctuation and Grammar</b></p> <p><b>Threshold Performance</b> Candidates spell, punctuate and use the rules of grammar with reasonable accuracy in the context of the demands of the question. Any errors do not hinder meaning in the response. Where required, they use a limited range of specialist terms appropriately.</p> <p><b>Intermediate Performance</b> Candidates spell, punctuate and use the rules of grammar with considerable accuracy and general control of meaning in the context of the demands of the question. Where required, they use a good range of specialist terms with facility.</p> <p><b>High Performance</b> Candidates spell, punctuate and use the rules of grammar with consistent accuracy and effective control of meaning in the context of the demands of the question. Where required, they use a wide range of specialist terms adeptly and with precision.</p>	<p><b>(5 marks)</b></p> <p><b>(1 mark)</b></p> <p><b>(2 marks)</b></p> <p><b>(3 marks)</b></p>
<p><b>3(b)</b></p>	<p><b>Level 1 (Basic) 1-2 marks</b> Gives a basic idea. Elaboration is very limited. <i>E.g. they could strengthen buildings to make them storm proof just by boarding up windows or having shutters. They could build simple storm shelters. Those who can read/have TV could teach/inform the population what to do if a tropical storm strikes. They could ring a bell to tell people to evacuate the area. None of these is very expensive but they can be effective. Build houses from bamboo (or other appropriate materials)</i></p>	<p><b>(4 marks)</b></p>

	<p><b>Level 2 (Clear) 3-4 marks</b> Clear description of methods with development of ideas. <i>They could build simple yet effective concrete shelters on stilts. They could have village meetings where women in Bangladesh are taught not to wear saris in case they have to swim, i.e. clear idea of even though they are poor there is always something they <b>could</b> do.</i> <i>Must go beyond figure 6. 'Education' needs some qualification.</i></p>	
	<b>Total for Question 3: 15 marks</b>	

<p><b>4(a)</b></p>	<p>3×1 Any statement that shows the level of shaking was not the same in all cities (1) In 3 cities (or named city/cities) there is violent shaking whereas there is severe shaking in 3 cities (or named city/cities) (1) and moderate shaking in only one city (or named city) (1)</p>	<p><b>(3 marks)</b></p>
<p><b>4(b)</b></p>	<p>If a 'No' box is ticked and the response is clearly a 'Yes' answer (or vice versa) then credit the response</p> <p><b>Level 1 (Basic) 1-4 marks</b> Simple statements without development of ideas. Yes: Simple ideas about how damage can be reduced. <i>E.g. They could strengthen buildings to make them earthquake proof. They could teach the population what to do if an earthquake strikes. They could make shacks out of bendy materials, i.e. some idea of even though they are poor there is always something they could do.</i> No: <i>E.g. Haiti is a poor country/low GNI and cannot afford expensive schemes. As it is poor, Haiti has other more pressing problems as earthquakes are not common. Building codes are not enforced as earthquakes are rare. Building codes are not enforced as people cannot afford the expensive building materials. Haiti has no army to help rescue people.</i> Accept simple ideas about never been able to beat the forces of nature no matter how rich you are. <i>It was a very powerful quake and the epicentre was near the surface so there was a lot of shaking.</i> Accept simple ideas about why people cannot adequately prepare as earthquakes cannot be accurately predicted, e.g. <i>People cannot be told when an earthquake is coming so cannot be ready for it.</i> Accept correctly identified lifts from figure 7.</p> <p><b>Level 2 (Clear) 5-6 marks</b> Clear description of methods with development of ideas. Yes: <i>E.g. They could build houses out of materials that are flexible, such as bamboo. These will not collapse when an earthquake strikes as they move with the shock waves, i.e. clear idea of even though they are poor there is always something they could do.</i> No: <i>E.g. Haiti is a poor country as shown by its low GNI/low ranking on HDI and cannot afford expensive schemes such as retrofitting of buildings. Building codes are not enforced as people cannot afford the expensive building materials and have to rely on making their own houses out of sun baked bricks which would never withstand such a powerful earthquake.</i> Clear ideas about why people cannot adequately prepare as earthquakes cannot be accurately predicted. <i>E.g. Even though much research and money has been spent on trying to predict earthquakes none have been successful. People get only a couple of seconds warning when an earthquake is coming so cannot evacuate the area.</i> Accept clear ideas with examples about never being able to beat the forces of nature no matter how rich you are. Development may be case study examples from other 'poor quakes'.</p> <p><b>Level 3 (Detailed) 7-8 marks</b> Detailed description of methods with continued development of ideas. Continued development could be case study examples.</p>	<p><b>(8 marks)</b></p>

	<p>Yes: <i>E.g. In Costa Rica they have built houses out of bamboo, which is cheap to produce, but is very strong and bends easily. The bamboo houses will not collapse when an earthquake strikes as they are flexible and move with the shock waves. When a strong earthquake struck Costa Rica in 2009, none of the bamboo houses at its epicentre were destroyed. They could do this in Haiti as it is also a poor country, i.e. detailed idea of even though they are poor there is always something they <b>could</b> do.</i></p> <p>Accept hi-tech schemes at L2, but at L3 there should be some recognition that many LEDCs are limited in the type of ‘earthquake – proofing’ schemes that they can afford to use.</p> <p>No: <i>E.g. In the 1970s and 1980s, the Japanese government embarked on a major earthquake preparedness campaign and put much time and money into research on earthquake prediction. It failed to predict the earthquake which devastated the city of Kobe in 1995. Despite all this effort by seismologists, an earthquake prediction cannot yet be made to a specific day or month. The only thing that we can do is have an early warning device that can provide a few seconds warning before major shaking arrives at a place and it is unlikely that these would be in place in Haiti as it is a poor country as shown by its low GNI/low ranking on HDI and cannot afford expensive schemes. So the people of Haiti could not be told when an earthquake is coming so could never be ready for it.</i></p> <p>Knowledge of accurate information appropriately contextualised and/or at correct scale.</p> <p><b>Spelling, Punctuation and Grammar</b></p> <p><b>Threshold Performance</b> Candidates spell, punctuate and use the rules of grammar with reasonable accuracy in the context of the demands of the question. Any errors do not hinder meaning in the response. Where required, they use a limited range of specialist terms appropriately.</p> <p><b>Intermediate Performance</b> Candidates spell, punctuate and use the rules of grammar with considerable accuracy and general control of meaning in the context of the demands of the question. Where required, they use a good range of specialist terms with facility.</p> <p><b>High Performance</b> Candidates spell, punctuate and use the rules of grammar with consistent accuracy and effective control of meaning in the context of the demands of the question. Where required, they use a wide range of specialist terms adeptly and with precision.</p>	<p>(1 mark)</p> <p>(2 marks)</p> <p>(3 marks)</p>
<b>Total for Question 4: 14 marks</b>		

**SECTION B**

**The Challenge of Extreme Environments**

<p><b>5(a)(i)</b></p>	<p>2×1 All areas of tropical rainforest are located between the Tropics or, between 25° N+S (max). Many areas of tropical rainforest are on the Equator. Hot deserts on tropics. Some on western edge of continents. Cold environments in higher latitudes above polar circles.</p>	<p><b>(2 marks)</b></p>
<p><b>5(a)(ii)</b></p>	<p><b>Level 1 (Basic) 1–2 marks</b> Simple statements without development of ideas. <u>Hot desert environment:</u> Accept simple references to effects of climate on vegetation. <i>E.g. very few plants are able to grow.</i> Or gives undeveloped responses that gives examples of types of plants <i>e.g. cactus, brush.</i> Credit simple statements about the climate characteristics at Level 1: <i>It is too hot/dry etc.</i> <u>Polar environment:</u> Accept simple references to effects of climate on vegetation. <i>E.g. very few plants are able to grow.</i> Or gives undeveloped responses that give examples of types of plants <i>e.g. algae, lichens.</i> Credit simple statements about the climate characteristics at Level 1: <i>it is too cold, too much lying snow.</i> <u>Tundra environment:</u> Accept simple references to effects of climate on vegetation. <i>E.g. very few plants are able to grow/sparse vegetation.</i> Or gives undeveloped responses that give examples of types of plants. <i>E.g. algae, lichens, mosses, shrubs, grasses.</i> Credit simple statements about the climate characteristics at Level 1: <i>it is too cold, too much lying snow for much of the year.</i> <u>Tropical rainforest environment:</u> Accept simple references to effects of climate on vegetation. <i>E.g. many plants are able to grow/grow all year round. High rainfall/temperature.</i> Knowledge of basic information. Simple understanding. Few links; limited detail; uses a limited range of specialist terms. Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.</p> <p><b>Level 2 (Clear) 3-4 marks</b> Clearly developed points. <u>Hot desert environment:</u> Accept clear references to effects of climate on vegetation. <i>E.g. very few plants are able to grow except those that are adapted to the dry conditions.</i> Or gives developed responses that give examples of types of plants <i>e.g. cactus roots soak up water and fleshy plant stores it, brush has needle leaves so less water lost.</i> Credit clear descriptions of the climate characteristics at Level 2 with a simple link to vegetations: <i>daytime temps up to 40°C, less than 250mm rain per year means that very few plants are able to grow etc.</i> <u>Polar environment:</u> accept clear references to effects of climate on vegetation. <i>E.g. very few plants are able to grow except those that are adapted to the cold conditions.</i> Or gives developed responses that give examples of types of plants <i>e.g. the algae and lichens grow where there is moisture and they hide in cracks to be protected from the wind.</i></p>	<p><b>(6 marks)</b></p>

	<p><u>Tundra environment</u>: accept clear references to effects of climate on vegetation. <i>E.g. very few plants are able to grow except those that are adapted to the cold conditions.</i> Or gives developed responses that give examples of types of plants e.g. <i>shrubs and grasses can grow as there is a very short growing season when temperatures increase.</i></p> <p>Credit clear descriptions of the climate characteristics at Level 2 with a simple link to vegetation: <i>temperatures of -30°C mean that few plants are able to grow.</i></p> <p><u>Tropical rainforest environment</u>: Accept clear references to effects of climate on vegetation. <i>E.g. much biodiversity as there is a continuous growing season.</i> Or gives developed responses that give examples of types of plants e.g. <i>plants that are adapted to the heavy rainfall, such as those with drop tips. References to stratification – Layers develop as trees have to grow rapidly to reach sunlight. There are only shrubs on the forest floor due to shady conditions etc.</i></p> <p>Credit clear descriptions of the climate characteristics at Level 2 with a simple link to vegetation: <i>temperatures of over 25°C all year and over 2000mm of rain per year mean the conditions are 'like a greenhouse'.</i></p> <p>Clear understanding.</p> <p>Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate.</p> <p>Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.</p> <p><b>Level 3 (Detailed) 5-6 marks</b></p> <p>Detailed effects with continued developments of ideas. <b>Or</b> clearly develops more than 2 effects with development of ideas i.e. a wider <b>range</b> or ideas. <b>Or</b> develops ideas relating to and linking climatic factors and vegetation in detail.</p> <p>Some examples of continued development which would access Level 3 are as follows:</p> <p><u>Polar environment</u>: <i>E.g. Antarctica is a continent surrounded by an ocean which means that interior areas do not benefit from the moderating influence of water. With high pressure over the cold continent, icy katabatic winds blow out towards the ocean and give little precipitation. The snow that does fall does not melt and the Antarctic continent reflects most of the sun's light rather than absorbing it as 98% of its area covered with snow and ice this means that temperatures can drop to -60°C and very few plants are able to grow except those that are adapted to the extreme cold conditions such as algae and lichens. These only grow where there is moisture and they grow in cracks to be protected from the katabatic winds. Further towards the coast and peninsula as temperature moderate, flowering plants are also seen but are not common. The Antarctic tundra vegetation also consists of shrubs and grasses as well. The amount of vegetation in the tundra consists on how much sun, or snow cover is in the area.</i></p> <p><u>Tropical rainforest environment</u>: <i>Temperatures are high (over 25°C) and constant throughout the year. There is a small annual range of temperature as the sun is always at a high angle in the sky and monthly average temperatures can reach 28°C. This leads to daily convective thunderstorms meaning that annual rainfall is about 2000mm. This means that there is no growing season and the vegetation is always evergreen, luxuriant and lush, as plants are constantly and quickly being replaced as they die off because they grow so quickly in the 'greenhouse like'</i></p>	
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	<p><i>conditions.</i></p> <p>Continued development could be case study examples. Knowledge of accurate information appropriately contextualised and/or at correct scale. Detailed understanding, supported by relevant evidence and exemplars. Well organised, demonstrating detailed linkages and the inter-relationships between factors. Range of ideas in a logical form; uses a range of specialist terms where appropriate. Well structured responses with effective use of sentences. Few spelling, punctuation and grammatical errors.</p>	
<b>5(b)</b>	<p>3×1</p> <p>There is a variation in the heating of the oceans (1). Areas of ocean heated less (1). Between 0°C and 3°C above 10°N and below above 10°S (1) and 3°C to 5°C in Equatorial regions (1). The exception is the Arctic Ocean which could increase in temperature by 4° (1).</p>	<b>(3 marks)</b>
<b>5(c)</b>	<p><b>Level 1 (Basic) 1-3 marks</b></p> <p>Simple, undeveloped statements. Fringes of hot deserts: <i>E.g. deserts could advance, land could become desert, desertification</i> Polar environment: <i>E.g. melting of ice sheets, threatens wildlife.</i> Tundra environment: <i>E.g. melting of permafrost, threatens wildlife.</i> Tropical rainforest environment: <i>E.g. less rainfall and forest cannot grow, threatens wildlife</i></p> <p><b>Level 2 (Clear) 4-5 marks</b></p> <p>Clear development of the point. Fringes of hot deserts: <i>E.g. desertification takes place, plants will not grow and savannah becomes desert.</i> Polar environment: <i>E.g. melting of ice sheets alters marine ecosystem as food chain is disrupted/seal and penguin populations start to decline/invasive species etc. Becomes more open to exploitation.</i> Tundra environment: <i>E.g. important habitats for polar bears/caribou are altered and threaten species. Becomes more open to exploitation.</i> Tropical rainforest environment: <i>E.g. less rainfall and forest cannot grow. Becomes Savannah grassland and cannot support as large a population of wildlife.</i> If Named places are used to exemplify the process, the L2 can be awarded: <i>E.g. Sahara spreading into the Sahel.</i> If no area chosen, then infer from response.</p>	<b>(5 marks)</b>
<b>Total for Question 5: 16 marks</b>		

6(a)(i)	2×1 Many of the areas with a very high risk of desertification are found along the Mediterranean coast/tourist areas. Many of the areas with a very high risk of desertification are found in the south of Spain and in the east of the country.	(2 marks)
6(a)(ii)	<p><b>Level 1 (Basic) 1-3 marks</b> Simple statements without development of ideas. Simple references to the causes of desertification, either human or natural, e.g. <i>Less rainfall. Higher temperatures. The climate is changing, part of a natural cycle of climate change</i>, or, human factors e.g. <i>The population is increasing. People chop down trees for building space. People grow too many crops on the land/use water to irrigate crops. People now live/have holiday homes in coastal area and use more water. Many tourists use more water. Reject more homes/tourist developments without reference to pressure on resources (water/soil etc)</i></p> <p><b>Level 2 (Clear) 4-5 marks</b> Clear references to the causes of desertification, either human or natural. Clear development of the point, i.e. how it leads to desertification. <i>Less rainfall, a higher temperature which leads to increased vaporation /increased drought, or rainfall becoming more irregular. The climate is changing; this is part of a natural cycle of climate change. Spain used to be much wetter, and may become so again</i>, or, human factors: <i>E.g. There is a rapid rate of population growth/population density increasing and more people chop down trees to clear land for tourist developments /grow too many crops on the land to cater for demand from tourism and rising permanent population which increases the pressure on the surrounding countryside etc. Many tourists use more water and aquifers are drying out lowering the water table and drying the land. May state a cause and develop the effect of this, e.g. more people chop down trees for fuel/wood keep too many animals on the land/grow too many crops on the land which means that the protective cover of vegetation is removed and soil is blown/washed away/or there are no tree roots to bind the soil together.</i></p> <p><b>Spelling, Punctuation and Grammar</b></p> <p><b>Threshold Performance</b> Candidates spell, punctuate and use the rules of grammar with reasonable accuracy in the context of the demands of the question. Any errors do not hinder meaning in the response. Where required, they use a limited range of specialist terms appropriately.</p> <p><b>Intermediate Performance</b> Candidates spell, punctuate and use the rules of grammar with considerable accuracy and general control of meaning in the context of the demands of the question. Where required, they use a good range of specialist terms with facility.</p> <p><b>High Performance</b> Candidates spell, punctuate and use the rules of grammar with consistent accuracy and effective control of meaning in the context of the demands of the question. Where required, they use a wide range of specialist terms adeptly and with precision.</p>	<p>(5 marks)</p> <p>(1 mark)</p> <p>(2 marks)</p> <p>(3 marks)</p>
6(b)	3×1 (or 1 + 1 for developed points) Keep fewer, healthier animals (1) through education about animal husbandry scheme or other aspects of improving grazing practices (1). Still have enough food but less risk of desertification as animals do not eat all the grass/shrubs/roots etc (1). The protective cover of vegetation is retained (1). Plant's roots bind the soil together (1) and hold moisture in the soil so it does not dry out (1). It is more difficult to blow the soil away in	(3 marks)

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	strong winds (1) or wash it away in heavy rains (1). Responses must go beyond Figure 11.	
	<b>Total for Question 6: 13 marks</b>	

<b>7(a)(i)</b>	<p>4×1 (or 1+1 for developed points) By 2030 the amount of deforested land is expected to increase (1). Most deforestation will occur to the south of the Equator (1) in the south and east of the region (1). There will be no rainforest left along the coast of Brazil (1). Accept any other valid change (1). (Eg. Quantities the amount of deforestation or remaining forest.)</p>	<b>(4 marks)</b>
<b>7(a)(ii)</b>	<p><b>Level 1 (Basic) 1-3 marks</b> Simple statements without development of ideas. e.g. <i>Alters local climates/less rainfall, loss of animal habitats/loss of species. Increased flooding/mudslides etc. Local people lose their livelihood.</i></p> <p><b>Level 2 (Clear) 4-5 marks</b> Develops the idea to describe the nature of the problem. e.g. <i>Alters local climates/less rainfall, fewer plants able to grow and the rainforest will become savannah grassland. Fewer trees breaks the nutrient cycle/land becomes infertile and this results in loss of animal habitats/loss of species, increased flooding/mudslides etc. Local people depend on the forest for food and if the land is infertile they cannot grow crops and there are fewer animals to hunt. This forces them out of their homes as does the threat from flooding.</i> Accept positive effects.</p>	<b>(5 marks)</b>
<b>7(b)</b>	<p><b>Level 1 (Basic) 1-2 marks</b> Simple statements without development of ideas. Gives scheme or method, e.g. <i>Agroforestry, selective logging</i> or gives a simple description of a scheme e.g. <i>Trees and a variety of crops are planted, some of which help to return nutrients to the soil. They should not remove all the trees to get the ones they want, e.g. Ecotourism is the responsible development and management of tourism, which helps to preserve the environment. Ecotourism provides funds for conservation projects, e.g. Ethical shopping – A certification label on products shows that it comes from a sustainable source. The demand for tropical hardwoods can be reduced by replacing them with alternative materials.</i></p> <p><b>Level 2 (Clear) 3-4 marks</b> Develops the idea to describe how the scheme or method works, e.g. <i>Agroforestry mimics the layers and diversity of the natural rainforest. Agroforestry serves as a 'buffer zone' surrounding and protecting the remaining rainforest. Ecotourism is the responsible development and management of tourism, which helps to preserve the environment as ecotourism provides funds for conservation projects/provides jobs for local people (crafts. guides), e.g. Ethical shopping – A certification label on products shows that it comes from a sustainable source. The demand for tropical hardwoods can be reduced by replacing them with alternative materials, e.g. plastics or timber from sustainable forests.</i> Have to go beyond figure 13.</p>	<b>(4 marks)</b>
<b>Total for Question 7: 13 marks</b>		

<p><b>8(a)</b></p>	<p>3×1 B (1), B – more precipitation (1) B – higher temperatures (1), use of figures (1). Accept references to growing season, etc. Accept has a greater temperature range (1). Accept references to most tundra in N.Hemisphere and graph B is a N.Hemisphere climate.</p>	<p><b>(3 marks)</b></p>
<p><b>8(b)</b></p>	<p>Accept answers from any type of development (actual, proposed or hypothetical) in any cold environment. Most likely are Alaska and Antarctica. If a 'No' box is ticked and the response is clearly a 'Yes' answer (or vice versa) then credit the response.</p> <p><b>Level 1 (Basic) 1-4 marks</b> Simple statements without development of ideas or limited development of ideas in Figure 17. Yes: e.g. <i>Development can be done in a way which does not harm the environment. We need the oil/gas/fish as we are running out. People in the area need the jobs, they have few alternatives. Only a small area will be used, the rest can be conserved – there has to be a balance,</i> or other simple ideas as to why economic gain is important. No: e.g. <i>If there is an accident, the environment will be ruined forever; it cannot go back to what it used to be. The area is very delicate, even a small accident could destroy it. It is an important area for research into our earth. It is the last wilderness left on earth,</i> or other simple ideas as to why environmental gain is important.</p> <p><b>Level 2 (Clear) 5-6 marks</b> Yes: Develops the idea to show clear ideas as to why economic gain is important, e.g. <i>Development can be done in a way which is sustainable and does not harm the environment such as limiting the number of tourists to Antarctica. We need the oil/gas as they are non-renewable and we are running out. We cannot put a few polar bears in the way of progress. People in the area are very much in favour as they need the jobs. They have few alternatives and they do not want to have to rely on the old ways of surviving in an extreme environment.</i> No: Develops the idea to show clear ideas as to why environmental gain is important, e.g. <i>If there is an accident, the environment will be ruined forever. Even a small oil spill can have knock on effects; it cannot go back to what it used to be as the ecosystem is very delicately balanced. It is an important area for research into understanding the way that our earth works and how we could avoid global climate change. It is the last wilderness left on earth. It is the least polluted environment that we have and it has to stay untouched by people.</i></p> <p><b>Level 3 (Detailed) 7-8 marks</b> Yes: Develops the idea to show detailed ideas as to why economic gain is important, e.g. <i>Development can be done in a way which is sustainable and does not harm the environment such as limiting the number of tourists to Antarctica as quotas are put on the number of tourists and visiting boats must be small. The tour organisers must follow strict guidelines which are laid down by IAATO. We need the oil/gas as they are non-renewable and we are running out. We cannot put a few polar bears in the way of progress. Alternative forms of energy will not meet our needs, so we must</i></p>	<p><b>(8 marks)</b></p>

	<p><i>exploit the resources that we have. People in the area are very much in favour as they need the jobs. They have few alternatives and they do not want to have to rely on the old ways of hunting and gathering to survive in an extreme environment.</i></p> <p><i>They want to be able to have a higher living standard, a good wage and a snowmobile.</i></p> <p>No: Develops the idea to show detailed ideas as to why environmental gain is important, e.g. <i>If there is an accident, the environment will be ruined forever. Even a small oil spill can have knock on effects; it cannot go back to what it used to be as the ecosystem is very delicately balanced. They are still finding oil in Prince William Sound over 40 years after the Exxon Valdez spill. It is an important area for research into understanding the way that our earth works and how we could avoid global climate change. It was through research in Antarctica that scientists discovered the ozone hole and gave us a chance to repair the damage we had done to our atmosphere. If the environment had been polluted we would have lost this opportunity.</i></p> <p>Continued development could be case study examples.</p> <p>Knowledge of accurate information, appropriately contextualised and/or at correct scale.</p> <p><b>Spelling, Punctuation and Grammar</b></p> <p><b>Threshold Performance</b> Candidates spell, punctuate and use the rules of grammar with reasonable accuracy in the context of the demands of the question. Any errors do not hinder meaning in the response. Where required, they use a limited range of specialist terms appropriately.</p> <p><b>Intermediate Performance</b> Candidates spell, punctuate and use the rules of grammar with considerable accuracy and general control of meaning in the context of the demands of the question. Where required, they use a good range of specialist terms with facility.</p> <p><b>High Performance</b> Candidates spell, punctuate and use the rules of grammar with consistent accuracy and effective control of meaning in the context of the demands of the question. Where required, they use a wide range of specialist terms adeptly and with precision.</p>	<p><b>(1 mark)</b></p> <p><b>(2 marks)</b></p> <p><b>(3 marks)</b></p>
<b>Total for Question 8: 14 marks</b>		