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General Certificate of Secondary Education
June 2013

Geography B   **40352H**

(Specification 4035)

Unit 2: Hostile World (Higher)

Final

Mark Scheme

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.

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.

Level 1 : Basic

Knowledge of basic information
Simple understanding
Little organisation; few links, little or no detail, uses a limited range of specialist terms
Reasonable accuracy in the use of spelling, punctuation and grammar
Text is legible.

Level 2 : Clear

Knowledge of accurate information
Clear understanding
Organised answers, with some linkages, occasional detail/exemplar, has a good range
of specialist terms where appropriate
Considerable accuracy in spelling, punctuation and grammar
Text is legible.

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, e.g. *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.

40352H – Section A – Living with Natural Hazards

Question	Description	Mark
1 (a)	2X1 Tropical storms affect the south and south-east coasts of North America, around the Tropic of Cancer (10-23°N), between the equator and the tropic of cancer. Earthquakes are found in narrow bands close to plate boundaries/ on the plate boundaries and are mainly on the western edges of the continents or oceans.	**2**
1 (b)	If candidates do both earthquakes and tropical storms mark both and accept the higher. **Level 1 (Basic) 1-2 marks** Gives a basic idea of process. Elaboration is very limited. Earthquakes: a basic idea of plate movement (not 'on a plate boundary') *E.g. Plates moving towards each other. One plate pushed below another. As plates move there are shock waves.* Tropical storms: Gives a basic idea of process. Elaboration is very limited. *E.g. Formed when warm air rises, form over warm oceans.* Knowledge of basic information. Simple understanding. Few links; limited detail; uses a limited range of specialist terms. Use of Figure 1 not correct but shows understanding of process – MAX Level 1. **Level 2 (Clear) 3-4 marks** Gives clear indication of process, linking statements. Gives clear indication of process/cause, linking statements. Earthquakes: *E.g. One plate subducted beneath another. As plates move, they snag and tension builds up. A sudden movement releases pressure and sends out shock waves, which causes earthquakes. On a destructive/ conservative plate margin.* Tropical storms: *E.g. Idea of evaporation and condensation. Formed when warm air rises and starts to spin due to the earth's rotation.* 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) 5-6 marks** Detailed indication of cause/process. Well linked statements which show the whole of the process. **Tropical storms:** *E.g. Formed over warm oceans where sea surface temperatures are over $27^{o}C$.* Heating causes evaporation on the surface of the water, *warm air rises and starts to spin due to the Coriolis effect.* *Earthquakes. Eg occur at a destructive plate boundary such as that between the South American plate and the Nazca plate. 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 the 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 causes earthquakes at the surface.*	**6**

| | 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. | |

2 (a)(i)	List of effects not linked to .Figure 2 (death, injury etc) – max 1 mark. 3 x 1 mudflows, pyroclastic flows, moderate ash fall. 1+1 the roofs of houses could be damages by pyroclastic flows. 1+1+1 mudflows (1) could come to the city and damage houses (1) as well as damaging livestock (1). <u>No reference</u> to Figure 2 – max 1 mark.	**3**
2 (a)(ii)	**Level 1 (Basic) 1-3 marks** Lists simple advantages with limited elaboration, either from resource or own knowledge. Geothermal/cheap power, jobs or money ideas from tourism (from figure), fertile soils, mineral deposits. Accept monitoring makes the area safer/can evacuate and people don't feel it will erupt in their lifetime. Accept ideas about not wanting to leave home/heritage/friends. Knowledge of basic information. Simple understanding. **Level 2 (Clear) 4-5 marks** Develops the point so that the nature of the advantage is clear. *E.g. good for farming as lava weathers into fertile soil, attracts tourists and local people can boost income selling souvenirs/driving tour buses/working in hotels etc, mineral deposits attract industry which bring jobs, Geothermal energy from hot rocks can heat houses cheaply. Benefits outweigh the risks.* Knowledge of accurate information. Clear understanding.	**5**
2 (b)	**Level 1 (Basic) 1-3 marks** Relevant information from Figure 3 *E.g.* Low GNI per person (1 050 $US), many people living in slums (70%), low number of personal computers per 100 population, building codes not enforced. Not just copied data - must show some understanding eg (GNI of $1050 is very low) Accept 'country A is less developed' Or makes simple, undeveloped statements houses. *E.g. houses are not well built, no money to protect houses.* MAX L1 Continuing damage due to lack of repairs MAX Level 1 Inability to replace possessions, make repairs, emergency aid (saves life etc), lack of insurance i.e. long term damage Knowledge of basic information. Simple understanding. Few links; limited detail; uses a limited range of specialist terms. Compares data from Country A and Country B with no elaboration – Max Level 1. **Level 2 (Clear) 4-5 marks** Clearly goes beyond Figure 3 and backs up with own knowledge to make developed statements. *E.g. 'Poorer country/lower GNI/ have less money to put schemes such as retrofitting in place to earthquake-proof buildings'. 'Many people living in slums in poorly built shacks that will collapse if shaking is violent'.'Low number of personal computers per 100 population, which means that people cannot access hazard maps / fewer people, can find information on what do during/after an earthquake or how to prepare their homes'*	**5**

| | *'In Country A it will take longer to recover so there will be more long term problems with diseases liked to sanitation (long term damage-developed).*
Knowledge of accurate information.
Clear understanding.
Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate. | |

3 (a)	2 x 1 1 mark for correct ranking (Rita = 9, Camille = 10), 1 mark for two correct bars and labels (Rita = 12 billion, Camille = 9 billion)	**2**
3 (b)	2 x 1 +1 Accept Global Warming/ Climate change/ El Nino as a reason <u>once</u> only. Number of tropical storms could increase/become more frequent / length of tropical storm season could increase/more tropical storm days – plus development. Plus more towns etc. in affected areas. Strength of tropical storms could increase/more severe storms/become more destructive – plus development. Range of tropical storms could increase/areas that did not get tropical storms in the past could experience them – plus development. Development could be: *therefore more potential for property/infrastructure damage.* **Or** *The population is increasing in many coastal areas and therefore there is more infrastructure put in place and this can be damaged in tropical storms. People are more affluent and more take holidays on the coast and there are more expensive hotels built which cost a lot of money to repair. People are more affluent and more expensive housing/possessions can be damaged. E.g. Florida.* Accept case study e.gs/evidence. Accept references to rising insurance costs and more towns/cities in affected areas.	**4**

| 3 (c) | **Level 1 (Basic) 1-3 marks**
Gives basic effects. Elaboration is very limited. States that a storm surge could occur, or that it will cause flooding, or that heavy rain will make rivers overflow. And/or gives a simple statement of damage.
Transport routes disrupted.
E.g. houses flattened, crops destroyed, homelessness, people killed etc.

Lists observable effects from resource and/or own knowledge.
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) 4-5 marks
Clear description of damage with development of ideas. *E.g. Trees uprooted by strong winds and there is a loss of animal habitats, a storm surge raises sea level and floods over the low lying land, as a result sea fish killed due to silting, freshwater fish killed due to sea water inundation. Flooding flushes out sewers and contaminates water supply.*
Development could be case study examples.
Clearly describes observable effects from resource and/or own knowledge.
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.

Spelling, Punctuation and Grammar (SPaG)

Threshold Performance
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.

Intermediate Performance
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.

High Performance
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. | 5

(1 mark)

(2 marks)

(3 marks) |
| 3 (d) | 4 x 1 (1+1 for a developed point)
Warn of approaching storm, know severity, know direction.
Accept path/track and area of uncertainty.
People time to prepare ('people can prepare' – needs elaboration), opportunity to evacuate. Accept examples of types of preparatory actions – buildings can be made safe, developments could include; shutters, roof straps etc. | 4 |

	Types of evacuation – mandatory/voluntary etc.	

4 (a)(i)	3 x 1 7.5 Between 6 and 7.99 Between 38-42	3
4 (a)(ii)	3X1 Max 2 marks for straight lifts. At least 1 piece of evidence must have elaboration. Information from resource. 52 deaths (1). Houses destroyed leaving people homeless (1). $15 billion of damage (1). Factories closed down production lines. (1) Fall in tourist numbers. (accept loss of jobs in tourism industry) (1). Cancellation of 64 000 flights (1). Crops loss so food prices increase (1). Villages evacuated/homeless (1).	3
4 (b)	The maximum mark at both Level 1 and 2 can be reached by candidates considering either one or both of the statements in the question, i.e. wildfires will increase in the future; this is because of climate change. **Level 1 (Basic) 1-4 marks** Simple statements without development of ideas. **Yes:** Simple reasons why the number of wildfires could increase/become more frequent due to climate change. *E.g. Less rainfall, higher temperatures.* Or references to resource: *some areas could increase in temperature by 3°C by 2070, dry summer in 2010; this could get worse in the future.* Discrete statements such as *The length of wildfire season could increase; areas that did not get wildfires in the past could experience them. The grass/trees will dry out,* i.e. link not made. **No:** Simple ideas about non-climate change causes of wildfires More people in wildfire areas, more arson, accidents (cigarettes, campfires, sparks from machinery, etc). Could argue that there is natural cycle of climate change and there will be fewer fires in the future. Knowledge of basic information. Simple understanding. Few links; limited detail; uses a limited range of specialist terms. **Level 2 (Clear) 5-6 marks** Clear reasons with development of ideas. Uses resource and own knowledge to develop an argument in favour of/against climate change leading to increased wildfires. **Yes:** Clear reasons why the number of wildfires could increase/ become more frequent due to climate change. Links these to the effects of climate change (e.*g. Less rainfall, higher temperatures/ global warming.* Or references to resource: *some areas could increase in temperature by 3°C by 2070, dry summer in 2010; this could get worse in the future)* to an effect *E.g. The length of wildfire season could increase as temperatures increase by 3°C by 2070, spring will arrive earlier and The grass/trees will dry out sooner, so fires will start earlier in the year. Areas that did not get wildfires in the past could experience them as the rainfall in those areas starts to decrease. As the range of the fires gets greater, more will occur.* Credit causes of climate change. Some clear development beyond the resource.	8

No: Clear ideas about non-climate change causes of wildfires.
E.g. More people live in the wildland-urban interface or will go on holiday in these areas. More buildings mean more fuel for fires. More accidents will be caused by people being careless with cigarettes or matches and not extinguishing campfires properly. More roads/railways/footpaths (once only) *so people can easily access area and start fires. Instances of arson are on the increase as disputes over ownership/development take place in the wildland-urban interface.*

Could argue that there is natural cycle of climate change and there will be fewer fires in the future or numbers will fluctuate as we pass through the cycle of warm/cool periods.
Development may be case study examples.
Knowledge of accurate information.
Clear understanding.
Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate.

	Level 3 (Detailed) 7-8 marks Detailed reasons with continued development of ideas. **Yes:** Detailed reasons why the number of wildfires could increase/become more frequent due to climate change. *E.g. The climate is changing; this is part of a natural cycle of climate change as ocean currents and patterns of winds change. This affects rainfall; less rainfall and higher temperatures lead to increased evaporation/increased drought, or rainfall becoming more irregular, this means that vegetation dries out and spontaneous heating can occur more often and start wildfires.* **No:** Detailed reasons why non-climate change (human) causes of wildfires. Continued development may be case study examples. Or a detailed explanation how why both human factors and climate change cause wildfires i.e. a balanced argument. *E.g. They are caused deliberately by arsonists for reasons such as land use dispute, this is often to enable money making development schemes to go ahead more easily. People throw away glass bottles which get broken and the glass fragments act as a lens to focus light rays into a small area, concentrating the heat from the sun and setting fire to the grass or forest debris. Human actions may provide the spark to start the fires buy will develop into wildfires if they are fanned by strong winds such as the Santa Ana winds which are dry winds blowing from high pressure areas over the desert, they bring no rain but rapidly spread wildfires, as they did across California in 2007.* Knowledge of accurate information appropriately contextualised and/or at correct scale. Detailed understanding, supported by relevant evidence and exemplars. **Spelling, Punctuation and Grammar (SPaG)** **Threshold Performance** 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. **Intermediate Performance** 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. **High Performance** 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.	 **(1 mark)** **(2 marks)** **(3 marks)**

Section B – The Challenge of Extreme Environment

Question	Description	Mark
5 (a)	2X1 Cold environments are found in the higher latitudes of North America around the Arctic Circle. Hot deserts environments are found along the western edges of the continents around the Tropics.	**2**
5 (b)	**Level 1 (Basic) 1-2 marks** Simple statements without development of ideas. **Hot desert environment**: Some simple reference to the effect of latitude *E.g. sun's rays passing through less of the atmosphere. A smaller area of the Earth's surface has to be heated.* And/or some simple reference to reasons for low rainfall; dry winds, rainshadow, etc. Accept simple statements about high pressure or descending air or little condensation or few clouds i.e. not linked. Accept simple references to effects of climate on vegetation. *E.g. very few plants are able to grow.* **Polar environment:** some simple reference to the effect of latitude *E.g. sun's rays passing through more of the atmosphere. A larger area of the earth's surface has to be heated.* Accept references to altitude. *E.g. There is much highland* (Antarctica). Accept simple statements about cold winds and lying snow and simple references to continentality (Antarctica). Tundra environment: some simple reference to the effect of latitude *E.g. sun's rays passing through more of the atmosphere. A larger area of the Earth's surface has to be heated.* Accept simple references to effects of climate on vegetation. *E.g. plants are able to grow when temperatures rise in the summer.* 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.	**6**

Level 2 (Clear) 3-4 marks
Gives clear indication of process, linking statements. Clear reasons for the formation with development of ideas.

Hot desert environment: Clear reference to the effect of latitude
E.g. sun's rays passing through less of the atmosphere and therefore lose less heat. A smaller area of the Earth's surface has to be heated due to the lesser curvature of the earth.
Accept clear statements about high pressure or descending air leading to little condensation and few clouds i.e. linked.
And/or some clear reference to reasons for low rainfall; dry winds, rainshadow, etc.
Gives clear indication of process, linking statements.
Accept clear references to effects of climate on vegetation.
E.g. very few plants are able to grow except those that are adapted to the dry conditions.

Polar environment: clear reference to the effect of latitude
E.g. sun's rays passing through more of the atmosphere and therefore, lose heat. A larger area of the Earth's surface has to be heated due to the curvature of the Earth.
And/or some clear reference to reasons for low rainfall; dry winds, rainshadow plus causes, etc.
Accept clear references to altitude. *E.g. There is much highland* (Antarctica) *and with increased height the temperature drops about 1 degrees C per 100 metres.*
Accept clear statements about frequent cold katabatic winds and snow cover reflecting heat and clear references to effect of continentality (Antarctica).
Tundra environment: clear reference to the effect of latitude.
E.g. sun's rays passing through more of the atmosphere and therefore, lose heat. A larger area of the Earth's surface has to be heated due to the curvature of the Earth.
Accept clear references to effects of climate on vegetation
E.g. sparse vegetation such as shrubs and grasses as there is a very short growing season.
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) 5-6 marks
Detailed reasons for the formation with continued development of ideas. **Or** Clearly develops more than two reasons for the formation with development of ideas, i.e. a wider **range** of ideas. **Or** Clearly develops ideas relating to and linking climatic factors and vegetation.
Some examples of continued development which would access Level 3 are as follows:

Polar environment: detailed statements about the effect of latitude *E.g.*
Accept detailed statements about frequent cold katabatic winds and snow cover reflecting heat and clear references to effect of continentality. *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 bow 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.*

Hot desert environment: *E.g. Prevailing winds blow from the ocean. When they reach land they are forced to rise over a highland area. They cool and there is precipitation. As the winds travel inland they become increasingly dry and a rainshadow area develops. When warm winds blow from the ocean they cross cold ocean currents. Sea fogs form as the air cools and condenses, meaning that the moisture is returned to the sea and does not reach the land. A coastal hot desert forms along the western edge of the continent. High atmospheric pressure exists over the land for most of the year. Therefore, prevailing winds are dry, as they blow from the land out towards low pressure areas over the ocean.*
And/or detailed explanation of the effect of latitude, high pressure or descending air. Accept detailed references to effects of climate on vegetation.
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.

6 (a)(i)	3 x 1 Russia, none, Atlantic	3
6 (a)(ii)	**Level 1 (Basic) 1-3 marks** Lists simple statements without development of ideas. *E.g. Take fish and whales from the sea, exploit minerals, to discover if minerals lay beneath the ice and whether these could be mined, accommodate tourists, to be used as a place for scientific research. Reject 'brings jobs' and 'money' ideas.* 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) 4-5 marks** Clear suggestions with development of ideas. *E.g. the US developed oilfields in Alaska so they did not have to depend on foreign oil supplies. Research bases were developed in Antarctica to enable the study of our world and the effects that human activity can have on it.* Development of ideas may be case study examples. *E.g. the Northstar oil platform was built offshore in the Beaufort sea to exploit new oil reserves.* 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.	5

| 6 (b) | **Level 1 (Basic) 1-3 marks**
Lists simple statements without development of ideas.
E.g. threats from shipwrecks, pipeline rupture –pollution of sea, threats to wildlife/plants, loss of animal habitats, damage to ecosystem. Accept positive effects; jobs, tax revenue etc.
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) 4-5 marks
Clear descriptions with development of ideas.
E.g. Loss of animal habitats which leads to species becoming endangered or extinct and disruption of ecosystem. Damages areas of unspoilt wilderness. In cold environments oil tankers are at risk from icebergs and any oil spill would damage the ecosystem and disrupt the food chain.
Development of ideas may be case study examples.
E.g.in Prudhoe Bay in 2006 oil leaked from a pipeline, it polluted an area of tundra crossed by migrating caribou. Enormous cost of clean-up takes money out of local economy.
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.

Spelling, Punctuation and Grammar (SPaG)

Threshold Performance
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.

Intermediate Performance
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.

High Performance
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. | **5**

(1 mark)

(2 marks)

(3 marks) |
| 7 (a) | 2 x 1
1 mark for correct ranking (North America = 5 Australasia = 6), 1 mark for two correct bars (North America = 150 Australasia = 100) | **2** |

7 (b)(i)	4 x 1 max 3 for straight lifts. At least 1 piece of evidence must have elaboration. Information from resource. Dust cloud that spread hundreds of kilometres (1). Damaged coral reefs in the Caribbean (1). Wildlife that once thrived in the area has mostly gone (1). The water table has fallen. Elaboration: reserve one mark for direct statement of how the above would impact upon the environment *E.g.as the water table drops, plants can no longer grow.* (1+1 can be awarded for elaborated points)	**4**
7 (b)(ii)	4 x 1 (allow 1+1 for developed points) Many villages in the Sahel region of Mali became uninhabitable (1) therefore migration took place (1). People left to go to Bamako resulting in rural depopulation (1). Have to travel further for fuelwood/water (1) and spend less time in the fields tending crops (1). Wells are filling up with sand (1). People are unable to grow enough food (1) which leads to malnutrition and starvation (1). Disease (1) which means that people are unable to work and support their family (1). i.e.= Own knowledge	**4**
7 (c)	**Level 1 (Basic) 1-3 marks** Relevant information from Figure 13, (not just copied new data – must show some understanding) e.*g.* most/high% of rural population below the national poverty line, rapid Population growth, small proportion of land area covered by forest, average yearly rainfall – or any reference to these indicators, but not just raw data – must understand that figures are high/low. Or makes simple, undeveloped statements, e.*g. poor people have to grow a lot of crops/keep a lot of animals.* Accept that A is less developed. 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) 4-5 marks** Goes beyond Figure 13 and backs up with own knowledge or makes developed statements. *E.g. Poorer country/have less money or population growing rapidly put pressure on the land and overgrazing/over-cultivation occurs. Most trees gone and soil is exposed to wind and rain and is easily eroded. Low rainfall causes drought, vegetation dies and soil dries out and is eroded by wind.* 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.	**5**
8 (a)	3 x 1 Trees remain to protect the soil (accept references to advantages of interception by trees less surface run-off). Maintains biodiversity, conserves species, etc. Maintains local climate, etc. It involves local communities in forest projects. Increases research into forestry. Accept: It is sustainable, trees remain to absorb CO_2 / less contribution to global warming, etc. Advantages could refer to either elements of the method (selective logging or reforestation).	**3**

	Accept developed points (1+1) The nature of the advantage should be clear – not just a description of the method.	

8 (b) (i)	3 x 1 (1+1 for developed point) Nutrient cycle broken, crops/grass need fertilizer to grow which can wash into rivers and pollute them. Loss of habitats/biodiversity and disrupts the food chain etc. Accept references to increased surface run-off/flooding and increased risk of desertification/wildfires etc. and changes local climate as there are fewer trees if crops are grown and therefore less evapotranspiration id linked to ecosystem. Accept – leads to deforestation / too many trees will be cut down	**3**
8 (b) (ii)	The maximum mark at Levels 1, 2 and 3 can be reached by candidates considering either one or both of the statements in the question, i.e. tropical rainforest will decrease in the future; this is because of climate change. **Level 1 (Basic) 1-4 marks** Simple statements without development of ideas. **Yes**: Simple reasons why deforestation could increase due to climate change. *E.g. Less rainfall, higher temperatures.* Or references to resource*: temperatures could increase by 5°C by 2070, some years get below average rainfall; this could happen in the future. There is more drought than in the past.* Discrete statements such as *The forests will get drier. It will become grassland.* **No:** Simple ideas about non-climate change (human) causes of deforestation. *Trees will be chopped down to grow crops, sugar/soya/oil palms will replace trees, removed by illegal loggers, used to graze cattle.* Could argue that there is natural cycle of climate change and there will only be short periods of drought and this will not affect forests. 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.	**8**

Level 2 (Clear) 5-6 marks
Clear reasons with development of ideas. Uses resource and own knowledge to develop an argument in favour of/against climate change leading to increased deforestation.

Yes: Clear reasons why deforestation could increase due to climate change. Links these to the effects of climate change (*E.g. Less rainfall, higher temperatures/global warming.* Or references to resource*: temperatures could increase by $5^{o}C$ by 2070, some years get below average rainfall; this could happen in the future. There is more drought than in the past.* And links to an effect.
E.g. increased temperatures and reduced rainfall lead to drought and without water tree roots collapse and they fall over. The delicate balance of the ecosystem is disturbed and trees die. Dry forests become susceptible to fires.
Credit causes of climate change.
Some clear development beyond the resource*.*

No: Clear ideas about non-climate change (human) causes of wildfires. *E.g. Trees will be chopped down to grow crops, sugar/soya/oil palms will replace trees as counties such as Brazil need to sell these to make money, removed by illegal loggers and this is very difficult to stop so trees will continue to be chopped down, used to graze cattle and this will continue as people depend on this for their jobs and livelihoods; they have no choice. More roads are being built into the forests which means more trees will be chopped down as the areas become more accessible.*
Could argue that there is natural cycle of climate change and there will be fluctuations as we pass through the cycle of warm/cool and dry/wet periods and there will only be short periods of drought and this will not affect forests.
Development may be case study examples.
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) 7-8 marks
Detailed reasons with continued development of ideas.
Uses resource well and own knowledge to develop an argument in favour of/against climate change leading to increased deforestation.

Yes: Detailed reasons why deforestation could increase due to climate change.
E.g. A rise of 3°C could destroy 75% of the entire Amazon within a 100 years, the map shows that the temperatures in the Amazon could go up by 5°C or more in the next 60 years. Increased temperature and less rainfall leads to drought, which means less tree growth and this changes the local climate and means less train, which leads to even more drought and even fewer trees – it's like a vicious circle. The delicate balance of the ecosystem is disturbed and with fewer trees there is less leaf litter to keep the soil fertile so trees cannot grow and the area becomes savannah grassland. Increased temperature and less rainfall mean that dry forests become susceptible to fires and a lightning strike could set huge areas of forest alight.
Credit causes of climate change.
Some detailed development beyond the resource

No: Detailed ideas about non-climate change (human) causes of wildfires. *E.g. Trees will be chopped down to grow crops, sugar/soya/oil palms will replace trees as counties such as Brazil are less developed countries with a low GNI will depend on exporting primary products to earn money. Many people have to grow their own food and companies want to clear forest for large scale agriculture; slash and burn methods clear large areas of forest for agriculture. Logging roads open up the forest by improving access for large trucks that carry logs out of the forest. These activities mean that people are more likely to cause deforestation than climate change as they are difficult to limit due to the size of the Amazon rainforest. Although logging permits are issued to companies, much deforestation is due to illegal logging and whole areas of forest can be chopped down just to remove a few valuable trees*
Also accept effect of HEP, mining, oil drilling and accept detailed reasons why forest can never grow back.
Could argue that there is natural cycle of climate change and there will be fluctuations as we pass through the cycle of warm/cool and dry/wet El Nino/La Nina periods and there will only be short periods of drought and this will not destroy forests in the long term.
Continued development may 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 response with effective use of sentences. Few spelling, punctuation and grammatical errors.

	Spelling, Punctuation and Grammar (SPaG)	
	Threshold Performance 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.	**(1 mark)**
	Intermediate Performance 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.	**(2 marks)**
	High Performance 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.	**(3 marks)**