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# GCSE GEOGRAPHY

## PAPER 1 LIVING WITH THE PHYSICAL ENVIRONMENT

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Mark scheme

8035/1

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V1.0

Additional specimen

Mark schemes are prepared by the Lead Assessment Writer 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 associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Assessment Writer.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' 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.

Further copies of this mark scheme are available from [aqa.org.uk](http://aqa.org.uk)

## Level of response marking instructions

Level of response mark schemes are broken down into levels, each of which has a descriptor. The descriptor for the level shows the average performance for the level. There are marks in each level.

Before you apply the mark scheme to a student's answer read through the answer and annotate it (as instructed) to show the qualities that are being looked for. You can then apply the mark scheme.

### Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptor for that level. The descriptor for the level indicates the different qualities that might be seen in the student's answer for that level. If it meets the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptor and the answer. With practice and familiarity you will find that for better answers you will be able to quickly skip through the lower levels of the mark scheme.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best fit approach for defining the level and then use the variability of the response to help decide the mark within the level, ie if the response is predominantly level 2 with a small amount of level 3 material it would be placed in level 2 but be awarded a mark near the top of the level because of the level 3 content.

### Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark. The descriptors on how to allocate marks can help with this. The exemplar materials used during standardisation will help. There will be an answer in the standardising materials which will correspond with each level of the mark scheme. This answer will have been awarded a mark by the Lead Examiner. You can compare the student's answer with the example to determine if it is the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the Lead Examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

Indicative content in the mark scheme is provided as a guide for examiners. It is not intended to be exhaustive and you must credit other valid points. Students do not have to cover all of the points mentioned in the Indicative content to reach the highest level of the mark scheme.

An answer which contains nothing of relevance to the question must be awarded no marks.

### Assessment of spelling, punctuation, grammar and use of specialist terminology (SPaG)

Accuracy of spelling, punctuation, grammar and the use of specialist terminology will be assessed via the indicated 9 mark questions. In each of these questions, three marks are allocated for SPaG as follows:

- **High performance** – 3 marks
- **Intermediate performance** – 2 marks
- **Threshold performance** – 1 mark

Qu	Part	Marking guidance			Total marks															
01	1	Conservative/Passive/Transform AO1 – 1			1															
01	2	One mark for the correct answer:  D. The majority of volcanoes occur in a line through the central part of North Island.  No credit if two or more statements are shaded  AO4 – 1 mark			1															
01	3	4.7 metres  No credit if two or more answers are circled  AO4 – 1 mark			1															
01	4	<table><tr><th>Level</th><th>Marks</th><th>Description</th></tr><tr><td>3 (Detailed)</td><td>5-6</td><td>AO2 Shows thorough geographical understanding of processes causing both volcanic and earthquake activity AO3 Demonstrates application of knowledge and understanding in a coherent and reasoned way in analysing why tectonic activity occurs in New Zealand</td></tr><tr><td>2 (Clear)</td><td>3-4</td><td>AO2 Shows some geographical understanding of the processes causing volcanic and/or earthquake activity AO3 Demonstrates reasonable application of knowledge and understanding in analysing why tectonic activity occurs in New Zealand</td></tr><tr><td>1 (Basic)</td><td>1-2</td><td>AO2 Shows limited geographical understanding of the processes causing volcanic and/or earthquake activity AO3 Demonstrates limited application of knowledge and understanding in analysing why tectonic activity occurs in New Zealand</td></tr><tr><td></td><td>0</td><td>No relevant content</td></tr></table> <b>Indicative content</b> <ul style="list-style-type: none"><li>Level 3 responses will be detailed and well developed. A wide range of geographical terms effectively applied. Complete sequence with processes explained.</li><li>Level 2 will have linked or elaborated statements and some accurate use of geographical terms.</li><li>Level 1 may comprise simple statements with limited subject vocabulary. Partial sequence or random points made.</li></ul>			Level	Marks	Description	3 (Detailed)	5-6	AO2 Shows thorough geographical understanding of processes causing both volcanic and earthquake activity AO3 Demonstrates application of knowledge and understanding in a coherent and reasoned way in analysing why tectonic activity occurs in New Zealand	2 (Clear)	3-4	AO2 Shows some geographical understanding of the processes causing volcanic and/or earthquake activity AO3 Demonstrates reasonable application of knowledge and understanding in analysing why tectonic activity occurs in New Zealand	1 (Basic)	1-2	AO2 Shows limited geographical understanding of the processes causing volcanic and/or earthquake activity AO3 Demonstrates limited application of knowledge and understanding in analysing why tectonic activity occurs in New Zealand		0	No relevant content	6
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		<ul style="list-style-type: none"> <li>• The command word is “suggest” so responses should set out the likely causes of both volcanoes and earthquakes from the sources provided, showing an understanding of the processes involved. The question requires analysis of the sources, as well as understanding of tectonic processes.</li> <li>• Accept explanations that refer to slab pull and gravitational movement of plates: the denser plate sinks into the mantle under the influence of gravity, which pulls the rest of the plate along behind it (slab pull).</li> <li>• Credit also the more conventional theory of the movement of convection currents in the upper mantle as the mechanism for plate movement and subduction.</li> <li>• Understanding of processes causing volcanic activity at destructive margins. Two plates move towards each other. The denser plate sinks below the lighter, less dense plate and melts in the subduction zone. Hot magma rises up through the overlying mantle and lithosphere, and some can eventually erupt out at the surface producing a belt of volcanoes.</li> <li>• Credit the idea that magma becomes increasingly viscous or sticky as it rises to the surface, producing composite volcanoes which are steep sided and have violent eruptions.</li> <li>• Understanding of earthquakes at destructive margins. As the two plates converge, pressure builds up. The rocks eventually fracture causing an earthquake. Most happen at shallow depths below the surface where the plates collide. They also occur at greater depth, in the lower part of the subduction zone.</li> <li>• Accept relevant explanations that link causes of volcanic activity and earthquakes.</li> <li>• Application of knowledge and understanding to the map and cross section. The Pacific Plate is subducted beneath the Indo-Australian Plate. Expect recognition that this plate boundary is destructive and that the denser ocean crust is subducted.</li> <li>• Earthquake epicentres occur in a line mainly but not entirely to the west of the plate margin where the plates collide. Volcanoes are confined to North Island in a linear belt, but some further west and north west where magma rises to the surface.</li> <li>• Max L1 for explanation of tectonic activity at constructive or conservative margins.</li> <li>• Max Level 2 for explanation of one of earthquakes or volcanoes only.</li> <li>• No credit for description of pattern in isolation.</li> <li>• It is not essential for responses to recognise existence of two oceanic plates. There should be some (implied) reference to Figure 1 and/or Figure 2 to access Level 2.</li> </ul>	
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		AO2 – 3 marks AO3 – 3 marks	
01	5	<p>There has been an overall decrease in extent of Arctic Sea ice (1). The changes in Arctic sea ice have fluctuated considerably (1) There was limited change from 1979-1996 (1) followed by rapid decrease 1996 onwards (d) (1).</p> <p>Credit use of data shown on graph or for data manipulation. eg a decrease in extent from almost 8 million km to approx. 4 million at lowest point.(1) A loss of almost 50% (in 36 years). (1) A decrease from 7.2 million sq km to 4.8 million sq km between 1979-2016. (1) Considerable fluctuations from year to year-rapid decrease 2006-2007, followed by rapid increase 2007-2009.(1)</p> <p>No credit for stating that there has been a steady or consistent decrease. No credit for explanations of change.</p> <p>AO4 – 2 marks</p>	2
01	6	<p>Two separate ways are required. Credit relevant human activities that link to rising temperatures/enhanced greenhouse effect and diminishing sea ice. The links with extent of Arctic sea ice do not have to be explicit.</p> <p>Eg Increased burning of fossil fuels (1) Increased manufacturing of products (1) Rapid rates of deforestation (1) Increased methane emission from agriculture/mining (1) Carbon emissions from transport using oil and gas. (1) Greater use of fertilisers/sewage farms (1) Use of halocarbons ( 'man made' powerful greenhouse gas used by industry to make solvents and for equipment cooling). (1)</p> <p>AO1 – 2 marks</p>	2

01	7	Level	Marks	Description	4
		2 (Clear)	3-4	AO1 Demonstrates accurate knowledge about long- term climate change. AO2 Shows a clear understanding of the natural factors that help to account for long-term changes in climate. Explanations are developed.	
		1 (Basic)	1-2	AO1 Demonstrates limited knowledge about long- term climate change. AO2 Demonstrates some understanding of the natural factors that help to account for long-term changes in climate. Explanations are partial and limited in scope.	
			0	No relevant content	

**Indicative content**

- Level 2 responses will be developed explanation(s) or linked statements about the natural factors affecting long term climate change, with some accurate use of geographical terms
- Level 1 responses are likely to be simple random statements, with little development, sequence or explanation. Limited subject vocabulary used.
- The command word is “explain” which requires an account as to how and why natural factors may contribute to climate change
- Knowledge of long term changes in climate since start of Quaternary period. Patterns of alternating cold periods (glacials) and warm periods (interglacials). Up to 10 glacial periods in past million years. Ice age continued until 12000 years before present.
- Understanding the effects of orbital Changes. Changes from a circular to an oval orbit can affect the amount of sunlight the earth receives. It takes 100,000 years for the Earth’s orbit to change from being more circular to an ellipse and back again. This eccentricity cycle coincides closely with the alternating cold (glacial) and warm (inter-glacial) periods in the Quaternary period. These changes are called Milankovitch Cycles. The Earth wobbles on its axis leading to changes in its tilt. When the Earth is more upright, it receives a greater amount of energy from the sun and experiences higher temperatures.
- Understanding of the effects of volcanic activity. Volcanoes can release large amounts of ash. This can reflect the Sun’s rays causing the planet to cool. Over time however, eruptions can release large quantities of greenhouse gases eg. Carbon dioxide. These gases can trap the Sun’s rays causing the planet to warm.
- Expect both factors to be explained for top of Level 2, but a well-developed explanation of one factor gains access to low Level 2.
- Reject human causes such as the enhanced greenhouse effect/global warming.

		AO1 – 2 marks AO2 – 2 marks	
01	8	<p>One mark for each correct word or description</p> <p>Figure 4 shows that the pattern of winds moving around the hurricane centre was anticlockwise because <b>the clouds show an anticlockwise pattern/the clouds spiral inwards/of the way the clouds are arranged (1)</b></p> <p>At X, the eye of the hurricane, the weather conditions were likely to be <b>calm/mostly clear skies/very little or no rain/low wind speeds (1)</b></p> <p>Credit other similar statements</p> <p>AO2 – 1 mark AO3 – 1 mark</p>	2
01	9	<p>Two separate primary effects should be stated, based on evidence in Figure 5</p> <p>Eg Roofs of many houses blown away/destroyed (1)  Much damage to buildings, with some completely destroyed/liable to collapse (1)  Many people made homeless.(1)  Damage to infrastructure such as pathways/roads. (1)</p> <p>No credit for longer term or secondary effects, or for effects not observable in the photograph.</p> <p>AO4 – 2 marks</p>	2



01	10	Level	Marks	Description	9
		3 (Detailed)	7-9	AO1 Demonstrates detailed knowledge of immediate and long-term strategies used in response to tropical storms, with secure use of detailed exemplification AO2 Shows thorough geographical understanding of the interrelationships between places, environments and processes in the context of a tropical storm. AO3 Demonstrates application of knowledge and understanding in a coherent and reasoned way in evaluating a wide range of responses to tropical storms	
		2 (Clear)	3-4	AO1 Demonstrates clear knowledge of immediate and/or long-term strategies used in response to tropical storms, with some use of exemplification. AO2 Shows some geographical understanding of the interrelationships between places, environments and processes in the context of a tropical storm. AO3 Demonstrates reasonable application of knowledge and understanding in evaluating some responses to tropical storms	
		1 (Basic)	1-2	AO1 Demonstrates limited knowledge of immediate and/or long-term strategies used in response to tropical storms, with little or no exemplification. AO2 Shows slight geographical understanding of the interrelationships between places, environments and processes in the context of a tropical storm. AO3 Demonstrates limited application of knowledge and understanding in evaluating responses to tropical storms	
			0	No relevant content	
<b>Indicative content</b>					
<ul style="list-style-type: none"><li>• Level 3 will be a well-developed answer. Classifies responses into immediate and long-term. Must contain a named example, with clear assessment. Evaluates responses.</li><li>• Level 2 Linked or elaborated statements, accurate use of geographical terms. May classify into immediate and long-term and assess a range of responses to tropical storms. May refer to named example. May start to evaluate responses.</li><li>• Level 1 responses are likely to consist of simple statements, with limited use of subject vocabulary. May be limited to generic statements, a list of strategies without development or classification. May be limited to a single strategy. May make a limited evaluation.</li><li>• The command is to “evaluate”, which means to consider a mix of responses to tropical storms and weigh them up so as to come to a conclusion about their effectiveness, degree of success or validity.</li></ul>					

		<ul style="list-style-type: none"> <li>• Responses to storms should be categorised into immediate and long-term. Strategies adopted may depend on the types of effects: social, economic or environmental. Responses to storms may vary depending on whether the impacts are primary or secondary. Credit distinctions between responses in HIC and LICs/NEE countries and between urban and rural settings.</li> <li>• Understanding of human factors affecting responses: population density, urbanisation of the population, poverty, strength of infrastructure, education, effectiveness of government, disaster planning.</li> <li>• Understanding of physical factors affecting responses: intensity of the storm, speed of movement, distance from the sea, physical geography of coastal impact zone.</li> <li>• HICs and some NEEs may have resources and technology, such as satellites and specially equipped aircraft, to predict and monitor the occurrence of storms. They are also equipped to train the emergency services appropriately and to educate people about necessary precautions. Storm warnings can be issued to enable the population to evacuate or prepare themselves for the storm. People can prepare by storing food and water or boarding up their windows.</li> <li>• Immediate responses may include evacuation of people before storm arrives, rescue people cut off by flooding, set up temporary shelters, provide supplies of food, water, gas, electricity supplies, recover dead bodies to reduce disease risk, NGOs provision of aid workers, supplies, equipment.</li> <li>• Long term responses may include repair of homes, rehousing programmes, repair of damaged infrastructure, improved forecasting techniques, improved flood defences, promotion of economic recovery, improved building regulations, changed planning rules to avoid most vulnerable areas.</li> <li>• Understanding how different groups of people respond to tropical storms, including individuals, organisations, local governments, the national government and international aid organisations/foreign governments.</li> <li>• Individuals can construct makeshift flood defences to prevent their land from being flooded (eg sandbags).</li> <li>• Local governments ensure that education is provided and messages are given to locals to warn residents about potential hazards such as flooding and contaminated drinking water supplies.</li> <li>• Organisations identify hazard-prone areas at risk of flooding/environmental damage.</li> <li>• The national government ensures that relevant monitoring bodies produce the necessary information in forecasting the weather. It may mobilise military or emergency aid resources to prepare flood defences, evacuate people, respond to contamination, and protect crops and wildlife.</li> <li>• Knowledge and understanding of specific example of a tropical storm eg Haiyan. Immediate/emergency responses. Government evacuated over 1 million people-over 1200 evacuation centres. Many sought refuge in an</li> </ul>	
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	<p>indoor stadium in Tacloban but some died when it was flooded. The government sent essential equipment and medical supplies to some regions. Emergency aid supplies arrived three days later by plane once the airport was reopened. It was a week before power was restored in some regions and partially in others. Within two weeks, over one million food packs and 250,000 litres of water were distributed. \$1.5 billion in foreign aid. A curfew was imposed two days after Typhoon Haiyan to reduce looting.</p> <ul style="list-style-type: none"> <li>• Longer term responses included rebuilding of roads, bridges and airport. Rice farming and fishing quickly re-established. Aid agencies helped to fund new fishing boats. Thousands of homes built away from flooded areas. More cyclone shelters. New storm surge warning system 'Build Back Better' -buildings upgraded with improved protection. Mangroves replanted. Plans to build new road dike.</li> <li>• Assessment/evaluation of different types of response. Individual responses have a relatively small impact on reducing damage. People may be able to protect their own land or property but not much beyond that. National governments can have the biggest impact because they have the resources, capacity and authority to respond to economic, social and environmental effects on a large scale. Aid organisations may focus on social impacts (safety, food, shelter), but will often invest in longer term projects and solutions.</li> <li>• Effectiveness of responses may be determined by many factors, including available technology, infrastructure, communications, remoteness of area affected, degree of preparedness, monitoring systems, capacity of emergency services, education, building design. The distinction between HIC and NEE responses can be over-simplistic. Some poorer countries such as Bangladesh have early warning systems, tracking, cyclone shelters, coastal defences which have reduced death tolls considerably.</li> <li>• Reject discussion of impacts unless directly related to responses.</li> <li>• A purely generic response without clear exemplification is limited to Level 2.</li> <li>• A response that lacks evaluation of responses is limited to Level 2.</li> </ul> <p>AO1 – 3 marks AO2 – 3 marks AO3 – 3 marks</p> <p><b>Spelling, punctuation and grammar (SPaG)</b></p> <p><b>High performance</b></p> <ul style="list-style-type: none"> <li>• Learners spell and punctuate with consistent accuracy</li> <li>• Learners use rules of grammar with effective control of meaning overall</li> <li>• Learners use a wide range of specialist terms as appropriate</li> </ul> <p><b>Intermediate performance</b></p> <ul style="list-style-type: none"> <li>• Learners spell and punctuate with considerable accuracy</li> <li>• Learners use rules of grammar with general control of meaning overall</li> <li>• Learners use a good range of specialist terms as appropriate</li> </ul>	<p><b>3</b></p> <p><b>2</b></p>
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	<p><b>Threshold performance</b></p> <ul style="list-style-type: none"><li>• Learners spell and punctuate with reasonable accuracy</li><li>• Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall</li><li>• Learners use a limited range of specialist terms as appropriate</li></ul>	<b>1</b>
	<p><b>No marks awarded</b></p> <ul style="list-style-type: none"><li>• The learner writes nothing</li><li>• The learner's response does not relate to the question</li><li>• The learner's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning</li></ul>	<b>0</b>