

# Mark Scheme (Results) January 2011

GCSE

## GCSE Geography (5GB1F) Paper 1

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## General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.
- **Mark schemes will indicate within the table where, and which strands of QWC, are being assessed. The strands are as follows:**
  - i) ensure that text is legible and that spelling, punctuation and grammar are accurate so that meaning is clear*
  - ii) select and use a form and style of writing appropriate to purpose and to complex subject matter*
  - iii) organise information clearly and coherently, using specialist vocabulary when appropriate.*

Question Number	Answer	Mark
1(a) (i)	D Core	(1)

Question Number	Answer	Mark
1(a) (ii)	D Core	(1)

Question Number	Answer	Mark
1 (b)	<p>1 mark for each appropriate statement:</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>• camps set up to provide shelter;</li> <li>• Emergency supplies of food and water distributed;</li> <li>• Field hospitals established;</li> <li>• Military mobilised to clear transports networks;</li> <li>• Emergency funding is provided by government;</li> <li>• Charities campaign for donations to help those affected;</li> <li>• Specialist workers (e.g. searchers) are flown in from other countries; etc...</li> <li>• Evacuation from dangerous sites.</li> </ul> <p>NB: Do not allow long-term responses.</p> <p>Don't credit precautions - such as planning for earthquakes, as these happen before the quake and therefore are not responses.</p> <p style="text-align: right;">(2 x 1)</p>	(2)

Question Number	Answer	Mark
1(c)	<p>1 mark for identifying an appropriate reason. Additional mark(s) awarded for describing the impact of the identified reason.</p> <p>e.g. Emergency services are poorly equipped in some countries (1 mark) making it difficult to reach people trapped under rubble (1 mark), whilst injured survivors may not get the medical care they need (1 mark).</p> <p>e.g. construction laws are less strict in some countries (1 mark) leading to buildings which quickly collapse when tremors hit (1 mark).</p> <p>Reasons are likely to include:</p> <ul style="list-style-type: none"> <li>• Weaker buildings</li> <li>• Poorly equipped emergency services</li> <li>• Limited access</li> <li>• Population insufficiently prepared</li> <li>• Less money for emergency operations</li> <li>• Stronger earthquake</li> <li>• Densely populated location</li> <li>• Focus closer to the surface</li> <li>• Time earthquake hit</li> <li>• More after shocks</li> <li>• Hazards created e.g. landslides, tsunamis.</li> </ul> <p>If only one hazard has been identified, maximum mark 3.</p>	(4)

Question Number	Answer	Mark
2(a)	<p>1 mark for each impact identified.</p> <p>Likely answers include:</p> <ul style="list-style-type: none"> <li>• Difficult farming conditions</li> <li>• Shorter growing season</li> <li>• Introduction of new crops to suit colder climate</li> <li>• Food shortages leading to famine</li> <li>• Spike in death rates due to illness and malnutrition</li> <li>• Transport affected - frozen rivers, impassable highlands etc...</li> <li>• Migration to warmer regions</li> </ul> <p>Question states 'such as the little ice age', therefore answers referring to other cold periods are also correct. i.e. Recent cold winters have led to a growth in Scotland's ski industry.</p> <p style="text-align: right;">(2x1)</p>	(2)

Question Number	Answer	Mark
2(b)	<p>One mark for each correct entry.</p> <p>Large <b>volcanic</b> eruptions can create a blanket of ash and gas which blocks out sunlight. Changes in the way the Earth orbits the sun can also affect climate. Sometimes the Earth's orbit is <b>circular</b>, and at other times it is more of an ellipse.</p> <p style="text-align: right;">(2 x 1)</p>	(2)

Question Number	Answer	Mark
2(c)	<p>1 mark for identifying an appropriate human activity. Additional mark(s) awarded for describing how the activity is contributing to climate change.</p> <p>e.g. Driving cars (1 mark) releases carbon dioxide (1 mark).</p> <p>e.g. Deforestation (1 mark) prevents the absorption of carbon dioxide (1 mark). If the felled trees are burned this also releases stored carbon dioxide (1 mark).</p> <p>Chosen activities are likely to include:</p> <ul style="list-style-type: none"> <li>• Transport - Travelling in petrol/diesel vehicles releases carbon dioxide.</li> <li>• Power generation - The majority of power stations use fossil fuels, which release carbon dioxide when burnt, to generate electricity.</li> <li>• Deforestation (1) - Trees absorb carbon dioxide and therefore cutting down trees prevents future carbon from being locked away.</li> <li>• Deforestation (2) - Felled logs are often burnt to make way for farming adding further CO<sub>2</sub> into the atmosphere.</li> <li>• Large cattle herds - Grazing cattle produce large amounts of methane when digesting food. Methane is a powerful greenhouse gas.</li> <li>• Expansion of rice farming - Organic matter decomposing in flooded paddy fields results in the release of methane.</li> <li>• The use of CFCs in manufacturing processes - CFCs are a very powerful greenhouse gas, used in refrigeration.</li> <li>• Recycling - Must make link to climate change for 2<sup>nd</sup> mark. E.g. recycling paper reduces the need for deforestation.</li> </ul> <p>If only one action has been identified, maximum mark 3.</p> <p>NB: Although carbon monoxide has little direct effect on climate change it does have a significant indirect effect, leading to the creation of ozone and lengthening the 'lifespan' of other greenhouses gases.</p> <p>NB: Different forms of transport count as one reason.</p>	(4)

Question Number	Answer	Mark
<b>3(a)(i)</b>	1 mark for correctly completing the graph.  Accept bars which are blue, grey, black or not coloured in. If a student has chosen to 'fill' the bar in a colour other than blue, no mark awarded.	<b>(1)</b>

Question Number	Answer	Mark
<b>3(a)(ii)</b>	C - July is the driest month	<b>(1)</b>

Question Number	Answer	Mark
<b>3(b)</b>	One point awarded for identifying an appropriate activity. Additional mark given for an extending statement.  E.g. Deforestation has damaged the biosphere (1 mark) by destroying the habitats of wild animals (1 mark).  Common responses likely to include: <ul style="list-style-type: none"> <li>• Deforestation has led to Habitat loss</li> <li>• Natural biome conversion to commercial farming</li> <li>• Natural biome conversion to urban use</li> <li>• Over-fishing has lead pushed some species to extinction</li> <li>• Resource extraction, e.g. mining, has lead to pollution</li> <li>• Pollution has poisoned rivers and damaged habitats</li> <li>• Alien species have dominated native plants and animals</li> <li>• Tourism has placed pressure on fragile environments e.g. coral reefs.</li> </ul> NB : Although the most answers to this question are likely to be rainforest focused, candidates can focus their response on any biome, including marine ecosystems such as reefs and mangroves.	<b>(2)</b>

Question Number	Answer	Mark
3(c)	<p>1 mark for identifying a valid action. Addition mark(s) awarded for statements which describe how the action conserves the biosphere.</p> <p>e.g. establish national parks (1 mark) to control construction (1 mark) and to ensure economic activities are sustainable (1 mark).</p> <p>e.g. Countries signed the Ramsar convention (1 mark) to protect endangered wetlands (1 mark).</p> <p>Common conservation methods include:</p> <ul style="list-style-type: none"> <li>• National Parks - legal status given to designated regions to protect habitats and wildlife.</li> <li>• Trade Agreements - CITES (Convention on International trade in endangered species) signed by 166 countries. Purposed to prevent trade of items made from endangered species, e.g. ivory products or crocodile skin footwear.</li> <li>• Biodiversity Action Plans - Designed to protect native / natural vegetation in areas where habitats and wildlife are under threat.</li> <li>• Global Treaties - The Ramsar Convention on Wetlands aimed to provide special protection status to endangered wetlands in 151 countries.</li> <li>• Sustainable management - re-planting projects.</li> </ul> <p>If only one method has been identified, maximum mark 3.</p>	(4)

Question Number	Answer	Mark
4(a)(i)	Accept between 3700 and 3750	(1)

Question Number	Answer	Mark
4(a)(ii)	Agriculture	(1)

Question Number	Answer	Mark
4(b)	<p>One point awarded for identifying an appropriate impact. Additional mark given for an extending statement that outlines how the people are affected.</p> <p>The question focus is reliability (i.e. availability) not water quality. Marks should only be awarded for quality statements if the link is clear. i.e. due to poor availability people may be forced to use unclean alternatives.</p> <p>E.g. Regions with unreliable water supply are often affected by drought (1 mark), reducing farm output (1 mark).</p> <p>E.g. Water shortages can force people to migrate (1 mark) putting pressure on already over-crowded cities (1 mark).</p> <p>Common responses likely to include:</p> <ul style="list-style-type: none"> <li>• Drought conditions damage farming, increasing food prices</li> <li>• Dry periods can increase the likelihood of wild fires</li> <li>• Droughts may force large scale migration</li> <li>• Pressure on water supplies could lead to conflict and war</li> <li>• May force people to drink and use dirty water, resulting in disease.</li> <li>• A lack of water could lead to dehydration and possible death.</li> </ul> <p style="text-align: right;">(2 x 1)</p>	(2)

Question Number	Answer	Mark
4(c)	<p>1 mark for identifying a human activity that can cause a reduction in water quality. Additional mark(s) awarded for extending statements that describe how the water quality is reduced.</p> <p>The question focus is water quality not reliability.</p> <p>E.g. Pollution from industry (1 mark) is often toxic (1 mark), making the water poisonous for wildlife (1 mark).</p> <p>E.g. Fertilisers washed into rivers (1 mark) can lead to algae blooms (1 mark) starving the water of oxygen (1 mark).</p> <p>Chosen activities are likely to include:</p> <ul style="list-style-type: none"> <li>• The disposal of hazardous waste from industry poisoning wildlife.</li> <li>• Excessive fertiliser use resulting in eutrophication. Algae blooms block out sunlight and starve the water of oxygen.</li> <li>• Deforestation can result in water course siltation, blocking channels and affecting flow and oxygen levels.</li> <li>• Sewage waste disposed in river courses can cause algae blooms and poison river life.</li> <li>• Chemical sprays from gardens, farms and parks can be washed into rivers.</li> <li>• Hot water released from power stations can reduce the water's oxygen content, reducing the rivers ability to sustain life.</li> <li>• Over-extraction can result in river courses experiencing dramatic falls in flow, concentrating pollutants.</li> <li>• Acid rain resulting from industrial pollution can change the ph of a river, killing wildlife.</li> </ul> <p>If only one impact has been identified, maximum mark 3.</p>	(4)

Question Number	Answer	Mark
5(a)	Spit (Allow beach, dune and depositional)	(1)

Question Number	Answer	Mark
5(b)	<p>1 mark for each appropriate statement.</p> <p>e.g. Longshore drift transports material along the beach (1 mark) in a zig zag movement (1 mark).</p> <p>e.g. Swash and backwash (1 mark) move pebbles along in a zig zag (1 mark).</p> <p>Common statements likely to include:</p> <ul style="list-style-type: none"> <li>• Movement of sand along the coast</li> <li>• Zig-zag motion</li> <li>• Swash carries pebbles up the beach</li> <li>• Backwash pulls pebbles down the beach</li> <li>• Direction depends on the angle of the wind</li> </ul> <p>NB: Answer can be drawn, written or a combination of both. A diagram without labels or explanation - max mark 1.</p>	(2)

Question Number	Indicative content	
5(c)	<p>Retreating coastlines can cause significant problems for local residents.</p> <p>Common responses may include:</p> <ul style="list-style-type: none"> <li>• Railways and roads may have to be closed affecting access</li> <li>• Property can be worthless as insurance is impossible to gain</li> <li>• Valuable farmland may be lost to the sea</li> <li>• Historical problems with cultural significance may be damaged or lost</li> <li>• Collapsing cliffs may make beach access difficult discouraging tourism</li> <li>• Coastline businesses could be closed causing unemployment</li> <li>• Amenities (e.g. electricity and water supplies) may need to be re-routed at considerable expense.</li> <li>• Prevention in one location can have knock-on consequences elsewhere.</li> </ul>	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	<p>At least one problem has been identified. Generic / simple statement(s).</p> <p>e.g. Houses may fall into the sea. (1 mark) Houses, roads and schools may fall into the sea (2 marks).</p>
Level 2	3-4	<p>Two or more problems have been identified. An attempt has been made to describe at least one problem. Some linked or elaborated statements. An appropriate case study region has been identified. Reasonable use of geographical terms.</p> <p>e.g. Along the Holderness coastline a number of caravan parks have been closed due to health and safety concerns. A number of farmers have also abandoned their land, leading to job losses (4 marks).</p>
Level 3	5-6	<p>Detailed, well developed answer referring to a specific case study region. Geographical terms have been effectively applied. Two or more problems have been clearly described.</p> <p>e.g. The Holderness coast is experiencing a rapid rate of retreat. Homes in Cowden and Barmston have been abandoned due to the crumbling coastline. For those who remain, access has been affected by damaged roads and rail links. The region's tourism industry has also been affected as the collapsing cliffs look ugly and make it difficult to reach the beach. (6 marks).</p>

If no case study, or an inappropriate location is identified, but the rest of the answer is level 3 standard then maximum mark 4.

Question Number	Answer	Mark
<b>6(a)</b>	<p>Any of the following:</p> <ul style="list-style-type: none"> <li>• Ox-Bow Lake (Allow Ox-Bow)</li> <li>• Meander (Allow slip-off slope and river cliff)</li> <li>• Floodplain</li> <li>• River channel</li> </ul>	<b>(1)</b>

Question Number	Answer	Mark
<b>6(b)</b>	<p>One mark for a basic statement:</p> <p>e.g. water pushes rocks downstream</p> <p>e.g. pebbles are carried in the current.</p> <p>Two marks for an extended statement:</p> <p>Smaller particles are carried in the current.</p> <p>Larger stones are dragged along.</p> <p>Fast flowing waters can move bigger rocks.</p> <p>Credit students who use specific terms, such as traction, suspension, solution and suspension.</p> <p style="text-align: right;">(2 x 1)</p>	<b>(2)</b>

Question Number	Indicative content	
6(c)	<p>A wide range of river management strategies are used to reduce flood risk. Common responses are likely to include:</p> <p>a) Hard Techniques:</p> <ul style="list-style-type: none"> <li>• Dams</li> <li>• River Straightening</li> <li>• Reinforced embankments</li> <li>• Canalisation</li> <li>• Overflow channels</li> </ul> <p>b) Soft techniques:</p> <ul style="list-style-type: none"> <li>• Landuse zoning</li> <li>• Managed floods (overflow marshes)</li> <li>• Afforestation</li> <li>• Monitoring</li> </ul>	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	<p>At least one action has been identified. Generic / simple statement(s).</p> <p>e.g. Flood risk has been reduced by building dams. (1 mark)</p> <p>e.g. Dams have been built and flood walls constructed. Trees were planted and washlands created. (2 marks).</p>
Level 2	3-4	<p>An appropriate case study region has been identified. At least two actions have been identified. An attempt has been made to describe at least one action. Some statements are linked or elaborated.</p> <p>e.g. In Bangladesh flood risk has been reduced by building mud embankments. Some parts of the river have also been dredged; this makes the river deeper making it hold more water. (4 marks)</p>
Level 3	5-6	<p>Detailed / well developed answer referring to a specific case study region. A good range of geographical terms have been effectively applied. Two or more actions have been clearly described.</p> <p>e.g. In York they have used both hard and soft techniques to lower the risk of flooding. The Foss barrier was built to redirect flood waters. Flood walls have been built to protect historic buildings and homes and businesses have had flood gates installed. Green areas of the city have been have been turned into washlands and are purposely flooded when the flow of the Ouse is high. (6 marks)</p>

If no case study, or an inappropriate location is identified, but the rest of the answer is level 3 standard then maximum mark 4.

NB: Focus of question is reducing flood risk, not the impact of flooding.

Question Number	Answer	Mark
7(a)	Mangroves create ideal conditions for the spread of disease  Or  Mangroves can make coastal transport difficult.	(1)

Question Number	Answer	Mark
7(b)	<p>1 mark for identifying an appropriate impact. Additional mark awarded for extending statements that describe how the change affects marine ecosystems.</p> <p>E.g. Warmer ocean temperatures are leading to more storms (1 mark) creating wave surges that can damage reefs (1 mark).</p> <p>Answers are likely to include:</p> <ul style="list-style-type: none"> <li>• Increased hurricane activity damaging fragile reefs and mangroves.</li> <li>• Coral reef bleaching caused by higher temperatures.</li> <li>• Increased flooding will result in more pollution and silt being washed into the sea.</li> <li>• Melting glaciers and ice-caps will lead to changes in ocean salinity, affecting currents, heat distribution and ocean habitats.</li> <li>• Rising sea levels from glacier melt and thermal expansion leading to the flooding of coastal ecosystems e.g. Mangrove forests.</li> <li>• Oceans will absorb greater quantities of carbon dioxide, increasing acidity.</li> </ul>	(2)

Question Number	Indicative content	
7(c)	<p>Pressures depend upon the case study chosen.</p> <p>Common pressures include:</p> <ul style="list-style-type: none"> <li>• Over-fishing - Commercial fishing techniques have resulting in the rapid decline of numerous fish species.</li> <li>• Tourism - The global growth of the tourism industry has led to many coastal regions being developed. Tourism often leads to harmful activities (such as snorkelling), increased pollution, and higher levels of siltation.</li> <li>• Population Growth - Rapid increases in coastal populations has overwhelmed sewage networks leading to raw waste being pumped directly into the sea.</li> <li>• Shipping - Increased international trade has led to a number of shipping related problems, including waste dumping and oil spills.</li> <li>• Global warming - Warming temperatures has lead to changes in acidity and salinity. Bleached corals result in habitat destruction and affect food chains.</li> </ul>	
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1-2	<p>At least one pressure has been identified. Generic statements.</p> <p>E.g. Marine ecosystems have been put under pressure from increased fishing. (1 mark)</p>
Level 2	3-4	<p>Case study region or specific ecosystem has been identified. At least one pressure has been described. Some linked / elaborated statements. Reasonable use of geographical terminology.</p> <p>E.g. Fishing in the Firth of Clyde has put pressure on a number of fish species, including cod. Habitats have also been threatened by the collection of kelp (seaweed) which provides cover and food for shellfish. (4 marks)</p>
Level 3	5-6	<p>Focused on a specific case study region or ecosystem. Clear explanation of at least one pressure. Wide range of geographical terms effectively applied.</p> <p>E.g. Modern fishing techniques have lead too many fish being caught in the Firth of Clyde, causing a collapse fish populations (including cod). Due to problems in the fishing industry many locals have diversified into tourism. The Firth of Clyde has become a popular with yachting, but the boats disturb wildlife and increased pollution. (6 marks).</p>

Question Number	Answer	Mark
<b>8(a)</b>	<p>1 mark for any appropriate statement. Common answers likely to include:</p> <ul style="list-style-type: none"> <li>• More jobs</li> <li>• Improved access</li> <li>• New ideas</li> <li>• Improved amenities</li> <li>• Increased investment</li> <li>• Greater cultural diversity</li> </ul> <p>Etc...</p>	<b>(1)</b>

Question Number	Answer	Mark
<b>8(b)</b>	<p>A point for each appropriate statement.</p> <p>Likely answers include:</p> <ul style="list-style-type: none"> <li>• Cultural loss</li> <li>• Increased demand for rare resources e.g. water</li> <li>• Theme park culture</li> <li>• Increased crime</li> <li>• Negative cultural activities e.g. drink, drugs</li> <li>• Environmental damage</li> <li>• Low paid and unskilled employment</li> </ul> <p>Etc...</p> <p style="text-align: right;">(2x1)</p>	<b>(2)</b>

Question Number	Indicative content	
<b>8(c)</b>	<p>Hot Arid:</p> <p>Central Australia - Water supplies are secured through dams and boreholes. Grey water is recycled. Houses are built into the rock, evening out temperature extremes. Solar panels are used to generate electricity.</p> <p>Polar:</p> <p>Alaska - Houses are built with steep roofs causing snow to slip off. Triple glazed windows trap heat indoors. Houses are built on stilts to prevent their heat melting the permafrost. Reliance on hunting and fishing as climate prevents farming. Geothermal heat sources are used to warm homes and generate electricity.</p>	
Level	Mark	Descriptor
	0	No rewardable material
<b>Level 1</b>	1-2	<p>At least one coping strategy has been identified. Generic statements - simple descriptions.</p> <p>E.g. In deserts people can survive by digging wells. (1 mark)</p>
<b>Level 2</b>	3-4	<p>Appropriate case study region has been identified. Two or more coping strategies have been identified. An attempt has been made to describe at least one strategy. Some linked / elaborated statements. Reasonable use of geographical terminology.</p> <p>E.g. In Australia groundwater is pumped to the surface by windmills and solar panels are used to generate electricity. (4 marks).</p>
<b>Level 3</b>	5-6	<p>Focused on a specific region. Two or more strategies have been clearly described. A wide range of geographical terms have been effectively applied.</p> <p>E.g. In Alaska local tribes hunt and fish as the cold weather makes farming almost impossible. Geothermal energy is used to warm homes and heat is retained with excellent insulation and tripled glazing. (6 marks).</p>

If no case study, or an inappropriate location is identified, but the rest of the answer is level 3 standard then maximum mark 4.

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