

# Mark Scheme (Results) Summer 2010

GCSE

## GCSE Geography (5GB1H) 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.

Question Number	Answer	Mark
1(a)	<p>X - Either Trench (Ocean); Subduction Zone; Plate Boundary/ margin. Destructive boundary.</p> <p>Y - Either Fold Mountains; Mountains; Volcano; continental plate.</p> <p>NB: Allow examples as well as terms e.g. Mt St Helens.</p> <p style="text-align: right;">(2 x 1)</p>	(2)

Question Number	Answer	Mark
1(b)	<p>1 mark for identifying an appropriate preparation strategy. Additional mark awarded for describing the impact / improvement the strategy would bring.</p> <p>e.g. authorities can produce action plans (1 mark). These tell the emergency services what to do in the event of an earthquake (2 marks).</p> <p>e.g. construction laws can be tightened (1 mark) preventing buildings from collapsing during a quake (2 marks).</p> <p>Preparations are likely to include:</p> <ul style="list-style-type: none"> <li>• Improving monitoring / prediction</li> <li>• Carrying out earthquake drills</li> <li>• Stock piling food, tents and medical supplies</li> <li>• Strengthening buildings (steel frames, shock absorbers, dampers etc...)</li> <li>• Reinforcing transport connections</li> <li>• Producing action plans</li> <li>• Evacuating population from danger zones (also allow relocation statements).</li> </ul> <p>Extra mark can be awarded for providing a relevant example, eg Build earthquake proof buildings, such as the Pan American building in San Francisco.</p>	(2)

Question Number	Answer	Mark
1(c)	<p>1 mark for each appropriate effect. Additional mark(s) can be awarded for extending statements. At least two effects must be described for full marks.</p> <p>Likely responses include:</p> <ul style="list-style-type: none"> <li>• Injury or death</li> <li>• buildings collapse</li> <li>• roads damaged</li> <li>• landslides</li> <li>• bridges weakened</li> <li>• tunnels cave-in</li> <li>• falling glass from tower blocks</li> <li>• explosions from broken gas pipes</li> <li>• food shortages due to supply lines disrupted</li> <li>• flooding from dams collapsing</li> <li>• Spread of disease due to a lack of basic amenities &amp; shelter.</li> <li>• Economic impacts, i.e. business closure and unemployment.</li> </ul> <p>NB: If no example region is identified, maximum mark for generic statements 3. Examples can be countries, regions, cities or specific buildings/constructions e.g. the Cyprus freeway.</p>	(4)

Question Number	Answer	Mark
2(a)	<p>One mark for each valid statement e.g. :</p> <p>(a) area of melt has increased</p> <p>(b) melting now on all coasts</p> <p>(c) melting has moved inland</p> <p>(d) melting has increased fastest in the NW</p> <p style="text-align: right;">(2 x 1)</p>	(2)

Question Number	Answer	Mark
2(b)	<p>1 mark: For giving an appropriate natural cause e.g. Sunspots (1 mark). Addition marks awarded for statements which extend the description. e.g. Sunspots are areas of intense activity on the surface of the sun (1 mark). Increased solar activity leads to higher energy levels reaching the earth. (2 marks)</p> <p>Chosen actions are likely to include:</p> <ul style="list-style-type: none"> <li>• Sunspots - Indicate the amount of energy released from the sun.</li> <li>• Volcanic Eruptions - Emissions block out sunlight lowering temperatures.</li> <li>• Orbital Changes - Changes from a circular to an oval orbit can affect the amount of sunlight the earth receives.</li> <li>• Axis Wobbles - Changes in the tilt of the Earth's axis can also affect the amount of sunlight received.</li> <li>• Ice sheets melting - Ice reflects heat, keeping the planet cool.</li> <li>• Meteorite impact throwing up a cloud of ash and dust, blocking out the sun.</li> </ul> <p>NB: Do not allow responses which refer to methane from cows. Cattle numbers have increased because of human actions.</p>	(2)

Question Number	Answer	Mark
2(c)	<p>1 mark for each appropriate impact. Additional mark(s) can be awarded for extending statements. At least two impacts must be described for full marks.</p> <p>Likely responses include:</p> <ul style="list-style-type: none"> <li>• Ski industry collapses</li> <li>• Increased cost of sea defences</li> <li>• Higher insurance premiums due to greater flood risk</li> <li>• New crops provide farmers with new opportunities</li> <li>• Tourism booms due to higher temperatures</li> <li>• Increased cost of maintaining water supply</li> <li>• Cheaper household bills due to lower central heating needs.</li> </ul> <p>NB: If no specific country is identified then maximum score 3. Impacts must relate to the country identified.</p>	(4)

Question Number	Answer	Mark
3(a)	<p>1 mark for a descriptive statement</p> <p>Responses likely to include: Rainforest is found in:</p> <ul style="list-style-type: none"> <li>• the north of Brazil</li> <li>• mainly located above 10°S</li> <li>• close to the equator</li> <li>• inland</li> <li>• is unevenly distributed.</li> </ul> <p style="text-align: right;">(2x1)</p>	(2)

Question Number	Answer	Mark
3(b)	<p>1 mark: Valid action identified but description is simplistic or incomplete. e.g. establish national parks (1 mark). Addition marks awarded for statements which extend the description. e.g. establish national parks (1 mark) to control construction(2 marks)</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>• Promotion of eco-tourism</li> <li>• Sustainable resource management - e.g. logging industries replant deforested areas.</li> </ul>	(2)



Question Number	Answer	Mark
3(c)	<p>One point for each valid statement. Extra marks can be awarded for providing supporting examples.</p> <p>Likely answers:</p> <p>Goods</p> <ul style="list-style-type: none"> <li>• Food and fibre crops</li> <li>• Animal products - food and hides</li> <li>• Wood - Furniture, fuel, construction material...</li> <li>• Water</li> <li>• Natural products - rubber</li> <li>• Genetic resources</li> <li>• Medicines</li> </ul> <p>Services</p> <ul style="list-style-type: none"> <li>• Humus for soil formation</li> <li>• Gene Pool</li> <li>• Nutrient cycling</li> <li>• Water purification &amp; regulation</li> <li>• Habitats</li> <li>• Climate regulation</li> <li>• Atmospheric gas regulation</li> <li>• Scenery/wildlife which attract tourists</li> </ul> <p>NB: Students must refer to both goods and services to achieve a maximum marks</p>	(4)

Question Number	Answer	Mark
4(a)	<p>One point for each valid statement. Likely answers:</p> <ul style="list-style-type: none"> <li>• Supply water for domestic use</li> <li>• Provide water for irrigation</li> <li>• Ensure an adequate water supply for industrial development</li> <li>• Potential sites for HEP</li> <li>• Regulated flow reduces flood risk downstream</li> <li>• Reservoirs provide habitats for wildlife</li> <li>• Scenic asset creating tourism opportunities</li> <li>• Fish stocks enable commercial fishing</li> <li>• Dam/reservoir may become a popular tourist attraction.</li> </ul> <p style="text-align: right;">(2x1)</p>	(2)

Question Number	Answer	Mark
4(b)	<p>1 mark: Valid impact identified but description is simplistic or incomplete.</p> <p>Addition mark awarded for statements which extend the description. E.g. Unreliable rainfall can make farming extremely difficult (1 mark). Drought conditions can lead to crop failure and famine (2 marks).</p> <p>Additional mark can also be awarded for providing relevant examples. E.g. Shortages can have a negative impact on the local fishing industry (1). Fishing ports on the Aral Sea have been abandoned as the waters have receded.</p> <p>Chosen impacts are likely to include:</p> <ul style="list-style-type: none"> <li>• Drought can lead to crop failure and starvation.</li> <li>• Unreliable rainfall prevents permanent settlement, restricting development.</li> <li>• Dry weather increases the rate of soil erosion, reducing a region's agricultural potential.</li> <li>• Limited supplies of clean / fresh water may result in dehydration and possible death.</li> <li>• Tensions over water supply can result in conflict and war.</li> <li>• Water shortages can lead to mass migration to wetter destinations.</li> <li>• Low water levels may prevent river transport.</li> <li>• Receding water levels can affect fishing industries.</li> </ul>	(2)

Question Number	Answer	Mark
4(c)	<p>1 mark for each reason which explains why small scale projects are usually sustainable.</p> <p>e.g. Hand dug wells were built in Ethiopia. These were considered sustainable as they were built, and are maintained, by local people (1). All the materials used were local and the construction method made use of the skills and expertise of local people (2). If there was a problem with the well in the future, in most circumstances local people could quickly fix the well (3). As these wells were built by local people were cheap to finance and many were dug. (4)</p> <p>NB: If no specific example is provided (e.g. water pump or well), maximum mark 3.</p>	(4)

Question Number	Answer	Mark
5(a)	Groyne	(1)

Question Number	Answer	Mark
5(b)	<p>Hydraulic Action / Hydraulic Power / Cavitation - Force of water breaks off loose material</p> <p>Abrasion / Corrasion / Pebble Hurling - Pebbles are knocked into the coastline chipping off sections of rock</p> <p>Solution / Corrosion - Chemicals and salt in the water dissolve surrounding rocks</p> <p>Attrition - Beach material collides chipping off jagged edges</p> <p>NB If description does not match the form of erosion identified, max mark 1.</p>	(2)

Question Number	Indicative content
5(c)	<p>At river estuaries longshore drift carries material out into the river's mouth. This deposited material forms a sandbank, described as a spit. Spits are unable to stretch across the entire estuary as the river will continue to erode a path. In sheltered waters behind the spit alluvium will build up forming salt marshes and eventually new land. Most spits are curved by periodic changes in wind direction which form waves in a different direction, resulting in the spit being pushed upriver.</p>

Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	<p>Simple statements. Sequence unclear and limited subject vocabulary used. Likely to be a description.</p> <p>Eg. Spits are made in the mouth of rivers by longshore drift.</p>
Level 2	3-4	<p>Linked or elaborated statements. A range of geographical terms have been appropriately applied. Sequence clear.</p> <p>e.g. longshore drift carries material in the mouth of rivers. The sand is deposited when the coastline changes direction, forming a sandbank known as a spit. Behind the sand, mud from the river is deposited making a marsh.</p>
Level 3	5-6	<p>Detailed, well developed answer referring to the complete sequence. A good range of geographical terms have been effectively applied.</p> <p>e.g. Material transported by longshore drift is carried into the river's mouth. The sand deposits forming a sandbank, known as a spit. Behind the sandbank conditions are calm leading to the deposition of alluvium, which overtime becomes stabilised by vegetation and may eventually form new land. Spits are fragile landforms as their shape often changes due to strong waves or alternating wind directions.</p> <p>NB: Full marks can be awarded gained through a detailed written description, clearly annotated diagrams or a combination of both.</p>

Question Number	Answer	Mark
6(a)	Overflow channel or Spill way or diversion channel. Allow statements that refer to the above even if “channel” etc is missing e.g. allow diverting flood water.	(1)

Question Number	Answer	Mark
6(b)	Hydraulic Action / Hydraulic Power / Cavitation - Force of water breaks of loose material Abrasion / Corrasion / Pebble hurling - Bedload is knocked into the river’s bed and banks chipping off sections of rock Solution / Corrosion - Chemicals in the water dissolve surrounding rocks Attrition - Bedload collides chipping off jagged edges  Note - If description does not match the form of erosion identified, max mark 1.	(2)

Question Number	Indicative content	
6(c)	<p>River channels change in many ways from source to mouth:</p> <ul style="list-style-type: none"> <li>• <b>SHAPE:</b> The channel increases in size, both width and depth, leading to an increased wetted perimeter.</li> <li>• <b>SPEED:</b> Flow velocity also increases as friction with the bed, banks, and bedload decreases.</li> <li>• <b>BEDLOAD:</b> Material within the channel changes along the river's course. In the highland river the bedload is mainly composed of large angular rocks. By the middle course erosion has transformed this material into smoother and smaller pebbles. By the lowland river most of the material carried is granular (sand and silt).</li> </ul>	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	<p>Simple statements. Sequence unclear and limited subject vocabulary used.</p> <p>e.g. the river gets wider and deeper.</p>
Level 2	3-4	<p>Linked or elaborated statements. A range of geographical terms have been appropriately applied. Sequence clear.</p> <p>e.g. At the source the river is narrow and shallow and the water is travelling slowly. At the mouth the channel has become deep and wide and the water is moving much faster.</p>
Level 3	5-6	<p>Level 3 can be achieved by either:</p> <ol style="list-style-type: none"> <li>Detailed descriptions of the changes referring to shape, sediment and velocity; or</li> <li>A clear description with some explanation.</li> </ol> <p>Answers should include the correct use of a range of geographical terms.</p> <p>a) e.g. Near the source of the river the channel will be narrow and shallow and will be filled with large, usually angular, bedload. Downstream the channel will widen and deepened; the bedload will be become smoother and smaller. As the channel becomes larger the flow speed will increase.</p> <p>b) e.g. Near the source of the river the channel will be narrow and shallow and will contain large rocks. High levels of friction will cause the water to flow slowly. Downstream the channel will become wider and deeper as the rocks within the river collide and smash into the bed and banks. The bedload will be smoothed and worn down.</p> <p>NB: Full marks can be awarded gained through a detailed written description, clearly annotated diagrams or a combination of both.</p>

Question Number	Answer	Mark
7(a)	1 mark: Valid reason identified but description is simplistic or incomplete. E.g. Krill is the main food item for a number of species, including the Blue Whale (1 mark). Addition marks awarded for statements which extend the explanation. E.g. Without Krill the web would collapse (1 mark) as Krill forms an essential link between producers and carnivores (2 marks).	(2)

Question Number	Answer	Mark
7(b)	<p>One mark for any reasonable suggestion. Likely answers include:</p> <ul style="list-style-type: none"> <li>• Increased levels of pollution</li> <li>• Changing water temperature caused by global warming</li> <li>• Over-fishing</li> <li>• Imbalance elsewhere in the web - e.g. a growth in the number of squid.</li> <li>• Reduction in phytoplankton</li> <li>• Increase in blue whale population</li> </ul>	(1)

Question Number	Indicative content	
7(c)	<p>The Law of the Sea was established to prevent individual countries from taking more than their fair share of the ocean’s resources and wealth. The UN backed treaty covers a wide range of issues including fisheries, navigation, pollution and resource extraction from continental shelves. The law states which countries have the right to extract / develop marine resources and protects the traditional concept of ‘freedom of the seas’ for open ocean regions. To protect areas of common ownership the International Seabed Authority has been established to safeguard resources and environments.</p> <p>The UN Helsinki Convention of 1974 led to the development of a range of programmes aimed at protecting and enhancing marine ecosystems. Laws were ratified to prevent the dumping of pollution or radioactive waste into the sea. Regional action plans were created to tackle marine black-spots, such as the Mediterranean Sea, leading to multi-national cooperation and joint action.</p> <p>Global Marine Species Assessment is an internationally financed and managed programme designed to establish a clearer understanding of the marine ecosystems and wildlife which our oceans support. It is hoped that this survey will lead to the identification of endangered species and threatened ecosystems, in turn leading to the creation of marine reserves and possible global parks.</p>	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	Answer provides a brief description of at least one global action which has been taken to try and achieve sustainability. Little, or none, example specific information provided. E.g. laws prevent the dumping of pollution (1).
Level 2	3-4	<p>A clear description with some elaborated statements. Specific details related to at least one identified global action. A range of subject specific terms have been used.</p> <p>At the UN’s Helsinki conference a number of treaties were agreed (1), including laws that prevented ocean vessels from any country dumping pollution at sea (2). The treaty also banned the dumping of nuclear waste (3).</p>
Level 3	5-6	<p>Descriptions / explanation are detailed and clear. Answer must refer to at least one global action. Good use of subject specific terms. Example specific details have been included.</p> <p>A number of UN treaties designed to protect marine ecosystems were agreed at the Helsinki conference of 1974 (1). These agreements were ratified and turned into laws which prevented the dumping of pollution (2) or nuclear waste at sea (3). The Helsinki conference also created regional action plans (4) which led to national governments with shared coastlines cooperating (5) to tackle a range of marine issues including fisheries, pollution and navigation (6).</p>



Question Number	Answer	Mark
8(a)	35° C or between -30 & 5 (Allow 1 degree either side).  Mark correct even when unit is missing.	(1)

Question Number	Answer	Mark
8(b)	<p>One point for identify an appropriate problem. Additional point awarded for describing the impact of the identified problem.</p> <p>e.g. Low rainfall levels (1) will make farming extremely difficult (2).</p> <p>Likely answers include:</p> <p><u>HOT ARID:</u></p> <ul style="list-style-type: none"> <li>• High daytime temperatures could lead to health problems e.g. dehydration, sun stroke, sun burn etc...</li> <li>• Low night time temperatures; frost could damage crops.</li> <li>• Low rainfall from April to October may lead to drought - crop failure, soil erosion, food shortages;</li> <li>• Temperature extremes and unreliable rainfall makes the rearing of animals difficult.</li> </ul> <p><u>POLAR:</u></p> <ul style="list-style-type: none"> <li>• Extremely low temperatures can lead to health problems;</li> <li>• Low temperatures, heavy snowfall and short growing season make conventional farming almost impossible;</li> <li>• Snowmelt in spring can lead to widespread flooding;</li> <li>• Mosquitoes swarm in summer melt water;</li> <li>• Frozen ground makes construction difficult.</li> </ul>	(2)

Question Number	Indicative content	
8(c)	<p>Life is changing for populations in polar and hot arid regions because:</p> <ul style="list-style-type: none"> <li>• Improved transport links have introduced new ideas and enabled local populations to migrant.</li> <li>• Tourism has lead to traditional cultures being over-whelmed, and in some cases being exploited as an attraction.</li> <li>• Increasing levels of economic development has lead to pollution and habitat destruction.</li> <li>• New developments in some regions had lead to the destruction of culturally important sites.</li> </ul>	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	<p>Simple statements. One or two changes have been identified but statements are generic and no specific case study region has been identified.</p> <p>e.g. Some indigenous people have been affected by tourists (1) who have brought in new cultures and products (2).</p>
Level 2	3-4	<p>One or more changes have been identified. Changes are specifically linked to a case study region and local population. Descriptions are clear and some statements are elaborated. A range of subject specific terms have been used.</p> <p>e.g. The Inuit culture of Northern Sweden is under threat from growing tourism. Tourists have brought new products and culture (1) which have been adopted by local people, for example alcohol drinks (2). These new alcoholic drinks are expensive to buy for the Inuits (3) and have been blamed for a range of growing social problems (4).</p>
Level 3	5-6	<p>A range of changes have been identified. Descriptions are detailed, clear and location specific. Good use of subject specific terms.</p> <p>e.g. The aboriginal people of central Australia have experienced many changes over the past two years. In some ways there culture has been threatened by growing tourism (1) which some believe has exploited their cultural, turning it into a 'disney' attraction (2). However, more recently, growing media coverage has led to a growing interest in traditional aboriginal foods (3) which has lead to the creation of employment opportunities in traditional farming and hunter/gathering (4). Tourism has also lead to improvements in transport and communication networks (5) which have brought remote aboriginal societies closer to 'western' civilization. These links have lead to products such as alcohol, tobacco, and drugs being used and the social problems associated. (6)</p>

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