

# Mark Scheme (Results) January 2010

GCE

## GCE Geography (6GE01) Paper 01 Global Challenges

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## General Guidance on Marking

All candidates must receive the same treatment.

Examiners should look for qualities to reward rather than faults to penalise. This does NOT mean giving credit for incorrect or inadequate answers, but it does mean allowing candidates to be rewarded for answers showing correct application of principles and knowledge.

Examiners should therefore read carefully and consider every response: even if it is not what is expected it may be worthy of credit.

Candidates must make their meaning clear to the examiner to gain the mark. Make sure that the answer makes sense. Do not give credit for correct words/phrases which are put together in a meaningless manner. Answers must be in the correct context.

Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the Team Leader must be consulted.

### Using the mark scheme

The mark scheme gives:

- an idea of the types of response expected
- how individual marks are to be awarded
- the total mark for each question
- examples of responses that should NOT receive credit.

- 1 / means that the responses are alternatives and either answer should receive full credit.
- 2 ( ) means that a phrase/word is not essential for the award of the mark, but helps the examiner to get the sense of the expected answer.
- 3 [ ] words inside square brackets are instructions or guidance for examiners.
- 4 Phrases/words in bold indicate that the meaning of the phrase or the actual word is essential to the answer.
- 5 ecf/TE/cq (error carried forward) means that a wrong answer given in an earlier part of a question is used correctly in answer to a later part of the same question.

### Quality of Written Communication

Questions which involve the writing of continuous prose will expect candidates to:

- show clarity of expression
- construct and present coherent arguments
- demonstrate an effective use of grammar, punctuation and spelling.

Full marks will be awarded if the candidate has demonstrated the above abilities.

Questions where QWC is likely to be particularly important are indicated "QWC" in the mark scheme BUT this does not preclude others.

Question Number	Answer	Mark
1(a)	C	1 (1)

Question Number	Answer	Mark
1 (b)	<ul style="list-style-type: none"> <li>• Greatest activity over oceans ❶</li> <li>• Not on the equator but either side or near / in or between the tropics ❶</li> <li>• Some landfall in Americas (and Caribbean) ❶</li> <li>• Not in global southeast / south America (as shown) ❶</li> <li>• Credit comment on pattern of differing intensities ❶</li> </ul>	(3)

Question Number	Answer	Mark
1(c)	<ul style="list-style-type: none"> <li>• Needs a source of very warm, moist air derived from tropical oceans ❶ with surface temperatures greater than 26 °C ❶</li> <li>• Sufficient distance from the equator needed to provide spin or twist due to stronger Coriolis ❶</li> <li>• Not found over south America due to deeper, colder waters ❶</li> </ul>	(3)

Question Number	Answer	Mark
1 (d)	<p>Answers can explore the role tropical cyclones play, but should acknowledge other hotspot elements too.</p> <ul style="list-style-type: none"> <li>• Philippines are found in a major cyclone belt ❶ and /or may present data / facts ❶</li> <li>• Can trigger other hazards e.g. mudslides ❶ and may present data / facts about this ❶</li> <li>• Other 'hotspot' hazards can be listed e.g. volcano, earthquake, tsunami ❶ or alternatively award ❶ mark for each hazard outlined (e.g. may name plates)</li> <li>• The vulnerability of the population (lack of capital, defences, warning etc.) adds to the "disaster" element ❶ as well as their coastal location ❶</li> </ul>	(4)

Question Number	Answer	Mark
2 (a)	<p>1 Cyclical / regular up and down / fluctuating ❶</p> <p>2 'Very steep' / 'exponential rise' (or synonym) ❶</p> <p>'Rises' &amp; uses data (do not accept 'rises' alone) ❶</p>	<p>1</p> <p>1</p> <p>(2)</p>

Question Number	Answer	Mark
2 (b)	<ul style="list-style-type: none"> <li>• Ice cores/glacier/ice cap/Lake Vostok ice/air in ice</li> <li>• Accept other long-term physical / pre-human evidence (fossil / biological / sediment)</li> </ul>	<p>1</p> <p>(1)</p>

Question Number	Answer	Mark
2 (c)	<p>Accept any observed or recorded change in the hydrosphere, atmosphere, lithosphere, biosphere. Popular suggestions likely to include: sea-level rise, glacial retreat, sea-ice melt (polar bear habitat lost), air temperatures, water temperatures, biome growth, tree-line, species diversity and food webs, arrival of spring, migrating birds. There are many others.</p> <p>In each case, award 1 mark for the basic idea and 1 mark for any extension, example or detail that <u>either</u> develops the description <u>or</u> helps establish a connection with climate change.</p>	<p>2+2</p> <p>(4)</p>

Question Number	Answer	Mark
2(d)	<ul style="list-style-type: none"> <li>• Human activities known to produce CO<sub>2</sub> include industrial / energy / fossil fuel / car emissions (or similar) 1 as well as deforestation 1</li> <li>• Current CO<sub>2</sub> 'spike' coincides with start of industrial revolution 1 and a date (1750-ish) is suggested 1</li> <li>• Highlights acceleration over last century or recent decades in line with growth of emerging economies / China / new superpowers 1</li> <li>• Current levels are unprecedented in recent geological history 1 and may provide details e.g. geological epochs are named 1</li> </ul> <p>Do not credit the mention of minority (non-IPCC) views as the question does not ask for this.</p>	<p>(4)</p>

Question Number	Answer	Mark
3(a)	B	1 (1)

Question Number	Answer	Mark
3(b)	<ul style="list-style-type: none"> <li>• Their use reduces the rate of use of fossil fuels / reduces CO2 emissions / carbon footprint ❶</li> <li>• Thus GHG emissions are lessened / less enhanced greenhouse effect ❶</li> </ul>	(2)

Question Number	Answer	Mark
3(c)	<ul style="list-style-type: none"> <li>• Costs of building turbines, solar etc</li> <li>• Economic problems to deal with / Credit Crunch</li> <li>• Large-scale alternatives lacking / greater innovation is still needed</li> <li>• Different starting positions (some countries already had renewable / nuclear e.g. France)</li> <li>• 'Green' grant aid differs from place to place</li> <li>• Some governments may feel less need to act</li> <li>• Any other sensible suggestion, including wider view of actions of China, US, Russia et al.</li> </ul> <p>Award ❶ mark for each basic idea or ❷ marks for a point that is extended or usefully exemplified.</p>	(3)

Question Number	Answer	Mark
3(d)	<p>Adaptation = adjusting to climate change but not addressing underlying issue of emissions. ❶</p> <ul style="list-style-type: none"> <li>• Managed retreat of UK coastline (as a response to eustatic rises)</li> <li>• Migration away from low-lying places (e.g. Maldives, Bangladesh coast)</li> <li>• Flood walls / Thames Flood Barrier (response to sea-level rise and / or more extreme storms)</li> <li>• Local changes in building design, clothing, leisure patterns, work patterns etc (as temperatures get warmer e.g. in London)</li> <li>• Changing agriculture as biomes may shift (so farmers change to more drought-tolerant crops)</li> </ul> <p>Award ❶ mark for each appropriate suggestion and award a further ❶ or ❷ marks for an explanation clearly linked with the idea of impact limitation.</p> <p><i>A list of strategies with <u>no</u> explanation should receive no more than ❷ marks. Do not credit mitigation efforts (reducing emissions).</i></p>	(5)

Question Number	Answer	Mark
4 (a)	LDCs	1 (1)
Question Number	Answer	Mark
4 (b)	<p>Recognises inequality between nations ❶</p> <p>Recognises some inequality within nations ❶</p>	(2)

Question Number	Answer	Mark
4 (c)	<ul style="list-style-type: none"> <li>• These were LDCs / "third world" in the past, now become richer / developed / industrialised ❶</li> <li>• More specifically, have increased their growth rate / GDP / exports / trade ❶</li> <li>• Additional detail for third mark might be groupings e.g. Asian Tigers or Brics (Brazil, India, China, Russia); or role of TNCs / mention of EPZ (export zones); or other creditable detail ❶</li> </ul>	(3)



Question Number	Answer	Mark
4 (d)	<ul style="list-style-type: none"> <li>• Oil money / high petrodollar income ❶ thanks to high demand on limited / finite supplies ❶</li> <li>• Credit statement of who key members are (needs at least two e.g. Dubai / UAE, Saudi Arabia) ❶</li> <li>• Powerful grouping / has global role due to ability to control oil supply and prices ❶ as seen during 1973 'oil shocks' / petrol price rises ❶</li> <li>• Establishment of cartel allows the higher price fixing ❶ and may know some additional historical context e.g. Arab-Israeli war ❶</li> <li>• Petrodollars serve as basis for multiplier into other sectors ❶ e.g. Dubai financial power ❶</li> </ul>	(4)

Question Number	Answer	Mark
5(a)	75+	1 (2)

Question Number	Answer	Mark
5 (b)	<ul style="list-style-type: none"> <li>• Migration of the elderly to the coast ❶ and may suggest a basic pull factor (but do not accept non-directional push factors) ❶</li> <li>• Marginally higher life expectancy in south UK ❶ as an aspect of north-south divide / has details ❶</li> <li>• Credit out-migration of young from rural parts ❶</li> </ul>	(2)

Question Number	Answer	Mark
5(c)	<ul style="list-style-type: none"> <li>• In-migration of young for work and/or study ①</li> <li>• Extends idea of jobs e.g. cities such as London are major job market / tertiary employers ①</li> <li>• Provides some detail of a major urban cultural or social amenity e.g. universities, music / arts/cultural life (do not credit clubs/pubs also found lower down the settlement hierarchy) ①</li> <li>• Internal and international (Poland) dimensions to the movement ①</li> <li>• Out-migration of elderly / young % falls ①</li> </ul>	(3)

Question Number	Answer	Mark
5(d)	<ul style="list-style-type: none"> <li>• NHS established ① and may offer extended specific details of its origins ① or its benefits ①</li> <li>• Immunisations and vaccines developed ① and may give examples ①</li> <li>• Improvements to water supplies, indoor WCs etc ① and may offer details of diseases avoided such as cholera, tuberculosis ①</li> <li>• Any other sensible suggestion ① and extension ①</li> </ul> <p>Must cover both Health and Hygiene for maximum marks to be awarded.</p>	(4)

Question Number	Answer	Mark
6(a)	A city or urban region with more than 10 m residents	1 (1)

Question Number	Answer	Mark								
6(b)	<table border="1"> <thead> <tr> <th>Lagos</th> <th>New York</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> <li>Mix of high &amp; low rise</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>Mostly high-rise &amp; skyscrapers</li> </ul> </td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>More dated-looking high-rise</li> <li>low-rise may be run-down/self-build (it could be slums)</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>Modern, high-quality, impressive architecture</li> <li>Formal methods of building</li> </ul> </td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>Evidence of industry / manufacturing / docks</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>Financial / services will dominate</li> </ul> </td> </tr> </tbody> </table> <p>One creditable point in each box for full marks. <i>Do not double credit simple mirrored responses (such as 'low' and 'high') - 1 mark only per pair.</i></p>	Lagos	New York	<ul style="list-style-type: none"> <li>Mix of high &amp; low rise</li> </ul>	<ul style="list-style-type: none"> <li>Mostly high-rise &amp; skyscrapers</li> </ul>	<ul style="list-style-type: none"> <li>More dated-looking high-rise</li> <li>low-rise may be run-down/self-build (it could be slums)</li> </ul>	<ul style="list-style-type: none"> <li>Modern, high-quality, impressive architecture</li> <li>Formal methods of building</li> </ul>	<ul style="list-style-type: none"> <li>Evidence of industry / manufacturing / docks</li> </ul>	<ul style="list-style-type: none"> <li>Financial / services will dominate</li> </ul>	(6)
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Question Number	Answer	Mark
6(c)	<ul style="list-style-type: none"> <li>May offer definition of sustainability (leaving the city for future generations) 1</li> <li>Air quality is very poor 1 e.g. 'equivalent of 20 cigarettes a day' / low-level ozone problems / asthmatics suffer / photochemical smog 1</li> <li>Habitats are lost to urban sprawl 1 and may provide example / details 1</li> <li>Green spaces within city may also be lost 1 and these are 'lungs' of city / support biodiversity 1</li> <li>Water issues matter in poorer megacities 1 e.g. cholera prevalence in Dharavi 1</li> <li>Any other sensible suggestion 1 and extension 1 including social sustainability issues (housing etc)</li> </ul> <p>For full marks, answer must explicitly relate <u>either</u> to environment or social sustainability <u>or</u> megacities. Restrict a generic list of urban impacts to 4 marks.</p>	(5)

Question Number	Indicative content
7 (a)	<p>Vulnerability - Population numbers will need to be discussed to assess the numbers at risk. Megacities attract poor migrants / many live in poverty in slums, heightening vulnerability</p> <p>Natural disasters - Cities are shown often to face multiple hazard risks, some of which are known to be increasing in frequency. Some of them are located within disaster hotspots that candidates should have studied (LA and Manila).</p>

Level	Mark	Descriptor
Level 1	1-4	No structure, mostly repeats content from Figure 7 stating that many cities face many risks. Or may describe a single "big" reason such as population growth or climate change.
Level 2	5-7	Provides some structure and makes specific references to population growth, as well as the multiple hazards described, leading to increased disaster potential. Provides details beyond those quoted in the resource (either of why hazards are increasing in frequency or of megacity growth)
Level 3	8-10	Well-structured account that explores the different dimensions of rising disasters (increased megacity population and rising hazard frequency), drawing both on the resource and own knowledge May recognise the variability of rising vulnerability (risk growing in megacities some more than others).

Question Number	Indicative content	
7 (b)	<p>Increasing natural hazards Hydro-met hazards is the expected focus, although landslides are also important and secondary effects of tectonic hazards might be discussed (e.g. climatic conditions / water shortages experienced by EQ refugees)</p> <p>Global warming A range of hydro-meteorological hazards may be considered including hurricanes, drought, extreme weather events in the UK, global sea-level rise</p> <p>El Nino events Cyclical increases in drought, floods, landslides etc. Successive El Nino events may become more severe due to climate change (more energy for hurricanes etc)</p>	
Level	Mark	Descriptor
Level 1	1-4	Simple statements offered about either global warming or El Nino (the former is far more likely). Asserts that some places get hotter or wetter or stormier (reasons not given).
Level 2	5-8	Some structure and has basic familiarity with both El Nino and global warming. Can offer <u>some</u> explanation why the problems associated with <u>one</u> of these has increased.
Level 3	9-12	Structured answer that describes and attempts to explain how both global warming and El Nino contribute to increasing hazards. At top end, expect several hazard types to be discussed.
Level 4	13-15	Well structured, covering a range of hazards, possible including geophysical landslides and mudslides. At top end, may

		acknowledge time-scales differ (El Nino is cyclical) or may examine how the two phenomena interact.
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Question Number	Indicative content.
8 (a)	<p>Physical environment - a range of climate change ideas feature in Figure 7: malaria, drought, cyclones, ice loss, floods, mobile dunes. Own ideas for candidates to add include sea-level rises.</p> <p>African continent - the effects are highly variable, not all parts experience change to same extent (e.g. coastal /interior)</p>

Level	Mark	Descriptor
Level 1	1-4	Little structure. Asserts that lack of water and rising malaria will create quite obvious problems (can't drink, etc). At top of level, may name a few specific places.
Level 2	5-7	Provides some structure for a range of physical changes. Begins to use own knowledge either to add new ideas or to develop the possible impacts of flood / disease / cyclone increases, etc.
Level 3	8-10	Well structured account of a developed range of ways in which the physical environment will be affected by climate change. At top end, expect explicit recognition of varied nature of African continent / physical challenges of climate change.

Question Number	Indicative content
8 (b)	<p>Economic impacts - Agriculture, raw material processing, tourist sector activities; impacts can be experienced at subsistence level or for big business / TNCs; and possible expense for governments (e.g. fighting disease or helping refugees)</p> <p>Climate change - Water shortages figured in part (a) but there are higher sea levels, forest stress, cyclone incidence, malaria distribution and other possible effects; resource shortages may exacerbate existing conflicts, etc.</p> <p>African continent - There is a wide difference between the extent to which different countries will be affected and the ability of different governments to introduce adaptation measures (e.g. S Africa compared with Chad)</p>

Level	Mark	Descriptor
Level 1	1-4	One or two simple statements, perhaps about future inability to farm due to lack of water, or coastal flooding.
Level 2	5-8	Some structure and a small range of generic economic problems is discussed for Africans. These may be related to two possible climate change impacts (i.e. goes beyond <u>just</u> water shortages <u>or</u> hotter temperatures <u>or</u> sea-level rise, etc.).
Level 3	9-12	Structured account dealing with a range of economic impacts linked with several climate change impacts that extend. At the top end may tackle variability of impacts across the continent.
Level 4	13-15	Structured analysis of how a range of people (farmers, business, government) or different nations are economically affected by a range of complex changes. Highlights varied vulnerabilities.

Question Number	Indicative content
9 (a)	<p>Reasons for trade bloc membership - EU, NAFTA, ASEAN and others (also accept OPEC) bring benefits due to tariff and customs changes (EU has additional benefits) - the benefits (markets, economies of scale) explains why countries are keen to become grouped in this way. Political reasons also encourage integration (notably post-war EU).</p> <p>Changes over time - Trade bloc membership is one way of building groups of nations that brings a range of benefits in an increasingly globalised world. Some trade blocs offer a greater degree of economic integration and are thus 'stronger' groups. Poor and rich countries group together, bringing benefits to both.</p>

Level	Mark	Descriptor
Level 1	1-4	One or two descriptive statements about who belongs to the EU and how this has changed over time.
Level 2	5-7	Provides some structure and can offer one or two reasons why EU (or other) countries want to be grouped in this way. At top end, may recognise "competitive" context of globalisation <u>or</u> has some additional explanation for the EU enlargement timeline.
Level 3	8-10	Structured account that begins to deal with the detailed benefits of trade bloc membership and thus membership growth. Explains political or economic context for their development. May recognise that trade blocs are diverse groupings.

Question Number	Indicative content
9 (b)	<p>Transport improvements - Expect low-cost air flights and container shipping to feature. May also mention high-speed rail. May have a timeline (canals, turnpikes, cars, etc) of transport technology helping build global networks ('shrinking world' ideas may figure in some good answers)</p> <p>Interconnected world - Connections exist between people, businesses, government, TNCs. Tourist flows likely to feature.</p> <p>Have helped build - Other influences can be drawn in e.g. transport has helped the process of integration, but relaxation of EU border controls was needed to complete the easyJet network. May suggest extra help was needed in the form telephone and internet too. May mention role of TNCs, governments.</p>

Level	Mark	Descriptor
Level 1	1-4	Simple statements about falling travel times / inventions listed.
Level 2	5-8	Some structure provided, either adopting timeline approach or has more than one interconnection (family, business, tourism).
Level 3	9-12	Structured account dealing with different types of inter-connectivity and different types of transport (ideally two in each case). May mention 'shrinking world'. At top end, may recognise other influences at work in parallel with transport changes.
Level 4	13-15	Well-structured account of the growth of global networks. May explicitly link different transport types to different key flows (containers for Chinese toys, air flights for TNC executives).

Question Number	Indicative content
10 (a)	<p>Government welcome - Government needs migration to help UK economy / tackle ageing population and increasing dependency.</p> <p>Some migrants but not others - Closing the door to some types of migrant might be seen as a response to popular concerns. The suggested policy shown is a real one and shows a pragmatic response (points system equivalent). Up-to-date answers will know Credit Crunch has produced labour surplus rather than shortages in some sectors. Note the emphasis here is on non-EU migration. However, continued 'open doors' with EU may explain why tougher rules are being introduced for other source regions.</p>

Level	Mark	Descriptor
Level 1	1-4	Some occupations are described (re-stated from resource) as unwanted, thus explaining the proposed ruling.
Level 2	5-7	Provides some structure. Addresses the fact that skills shortages exist in some sectors but not others, making this a practical solution. At top end may recognise government's problem of balancing national economic needs with popular rhetoric.
Level 3	8-10	Structured examination of skills shortages and surpluses. May explicitly tackle the global dimension of the migration by recognising that these restrictions do not apply to A8 nations.

Question Number	Indicative content
10 (b)	<p>Impact - expect some mixture of economic, social environmental, political, cultural ideas</p> <p>Retirement flows - expect some clarification of the population characteristics associated with this flow (a variety of over-50 age groups are involved, with differing impacts)</p> <p>Mediterranean - big region, much diversity - best answers may see local variability / impact hotspots</p> <p>Source and host - both need to be accounted for in Levels 3 &amp; 4</p>

Level	Mark	Descriptor
Level 1	1-4	One or two statements about why old people "head South".
Level 2	5-8	Some structure in a description of consequences that states a few details of source / destination or economic / social impacts.
Level 3	9-12	Structured examination of migration that includes a range of impacts for both source and destination (but do not expect perfect balance).
Level 4	13-15	Structured thoughtful account that provides good coverage of all the main aspects for this case study. At the very top end, expect some recognition of the <u>diverse</u> nature of this flow (either different sorts of people involved, or different parts of the Mediterranean affected).



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