



Mark Scheme (Results)  
Summer 2015

Pearson Edexcel GCE in  
Geography (6GE01)  
Unit 1: Global Challenges

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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.

## 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
<b>1 (a)(i)</b>	La Crescenta and La Canada Flintridge (must get both for one mark)	<b>(1)</b>

Question Number	Answer	Mark
<b>1 (a)(ii)</b>	<p>1. Wealthy state / country / people <b>with</b> high value assets e.g. houses / infrastructure (roads) / high financial vulnerability. ❶</p> <p><b>Do not credit 'it is a rich place' or comments about high population density - must link to property / assets</b></p> <p>2. MEDC so high capacity to cope / issue warnings / houses have sprinkler systems/ well educated or trained population who know what to do. ❶</p> <p><b>Don't allow "few live there" or "crops destroyed" (towns)</b></p>	<b>(2)</b>

Question Number	<i>Answer</i>	Mark
<b>1 (a)(iii)</b>	<ul style="list-style-type: none"> <li>Refers to seasonal movement / strengthening of high pressure zones / blocking anticyclones ❶ so limited evaporation/ rainfall ❶ linked to cold ocean temperatures ❶</li> <li>La Nina / ENSO ❶ often leads to increased aridity ❶ and may provide details e.g. every 2-7 years ❶ cold water so limited evaporation ❶ warm water has moved to eastern Pacific ❶</li> <li>Santa Ana winds from dry interior/deserts ❶</li> <li>CA has a Mediterranean / semi-arid / sub-tropical climate ❶ May provide details e.g. quotes climate data ❶</li> </ul> <p>Do not allow <b>reference to 'dry weather'</b></p> <p>Do not allow reference to El-Nino stage of the ENSO cycle.</p>	<b>(3)</b>

Question Number	Answer	Mark
<b>1 (b)</b>	<ul style="list-style-type: none"> <li>• Conservative boundary ❶ where plates move past one another at different rates / different directions ❶</li> <li>• Pacific plate moving northwest about 5-9cm per year, North American plate about 2-3cm per year ❶</li> <li>• Idea of build-up of pressure/plates lock and subsequent release ❶</li> <li>• San Andreas Fault system has numerous additional transform faults/ extensive fault zones so earthquakes are frequent ❶</li> <li>• Majority of coastal areas lie within 50km of the SAF ❶</li> </ul> <p>Only credit frequency data if supporting an explanatory point. Point mark each idea ❶ and credit other reasonable points. For full marks, should discuss/ imply earthquakes occur often.</p> <p><b>Do not award just "San Andreas Fault"</b> Do not over-credit <u>description</u> of single EQ's (year, strength)</p>	<b>(4)</b>

Question Number	Answer			Mark
<b>2(a)(i)</b>	Top three rainfall totals	Year	Rainfall in June (mm)	<b>1 1 (2)</b>
	1	2012	144	
	2	2007	<b>Accept any one of: 135,136,137,138,139</b>	
	3	<b>Accept any one of: 1911,1912,1913</b>	124	
	<ul style="list-style-type: none"> <li>• Accept answers in the range 135-139 mm</li> <li>• Accept answers in the range 1911-1913</li> </ul>			

Question Number	Answer	Mark
<b>2(a) (ii)</b>	<p><i>Support the view</i></p> <ul style="list-style-type: none"> <li>• The two highest figures are post-2000</li> <li>• Four of the five highest are post-1980</li> <li>• Apart from early 1900s, slight upward/increasing trend visible</li> <li>• Since 1950, maxima/peaks show upward/increasing trend</li> </ul> <p><i>Reject the view</i></p> <ul style="list-style-type: none"> <li>• High values were recorded 100 years ago / in early 1900s</li> <li>• Maxima / peak show a long-term decrease from 1900 until 1970s</li> <li>• Overall picture unclear / overall trend not striking enough / generally within 40-90mm</li> <li>• Recent peaks could be in range of statistical probability</li> <li>• It has fluctuated in the past and recent years continue to show wide fluctuations</li> </ul> <p>Award one mark data when linked to a valid point in each case.</p>	<p><b>2</b></p> <p><b>2</b></p> <p><b>(4)</b></p>

Question Number	Answer	Mark
<b>2(a) (iii)</b>	<ul style="list-style-type: none"> <li>• Floods / flooding</li> <li>• Mass movement / landslides / slumping/ mudslides</li> </ul> <p>No mark for tsunami or hurricane etc.</p>	<b>(2)</b>

Question Number	Answer	Mark
<b>2(b)</b>	<p>Short-term climate change operates over years to a few decades.</p> <ul style="list-style-type: none"> <li>Sunspot / solar flare activity ❶ affect temperatures because of more/less UV radiation ❶ [more storms = warmer]</li> <li>Volcanic <u>ash/emissions</u> ❶ <b>causes 'global dimming'</b> / cooling due to radiation reflection by SO<sub>2</sub> / ash ❶ may provide example e.g. Mount Pinatubo led to approx 0.5°C cooling ❶ provides condensation nuclei for rainfall ❶</li> <li>Cosmic collisions produce debris ❶ which block solar radiation ❶</li> <li>El Nino / ENSO cycles affect climate ❶ and may provide details of temperature / rainfall changes (e.g. drought in Australia during El Nino) ❶ or higher rainfall in other places (South America) ❶ also credit extended explanation (e.g. trade wind reversal) ❶</li> <li>Changes in the North Atlantic Oscillation ❶ or periodic movements of the jet stream / ocean currents ❶ over the UK can affect rainfall / temperature. ❶</li> </ul> <p>Do not credit</p> <ul style="list-style-type: none"> <li>Comments about albedo or permafrost as these are feedback loops, and not short term causes. Likewise, annual variation (hotter in the summer).</li> <li>CO<sub>2</sub> emitted by volcanoes as the impact is marginal if anything compared to other factors (USGS).</li> <li>Milankovitch (orbit/tilt/wobble).</li> </ul>	<p><b>2+2</b></p> <p><b>(4)</b></p>

Question Number	Answer	Mark
<b>3 (a)(i)</b>	<b>D</b> Cape Town	<b>(1)</b>

Question Number	Answer	Mark
<b>3(a)(ii)</b>	<p>Adaptation to changing rainfall patterns, which may rise or fall:</p> <ul style="list-style-type: none"> <li>• <b>Irrigation / desalination / other 'tech fix' or small scale water storage projects, e.g. microdams 1</b></li> <li>• Rainfall may change so food production would need to change location 1 e.g. rainfall increase means more fruit (some IPCC scenarios) 1 e.g. less rainfall means Mediterranean-type crops (e.g. olives) will thrive 1 and cotton production will struggle 1</li> <li>• Change timing of sowing / harvest to fit new conditions 1</li> <li>• Use of GM crops 1</li> <li>• Use land for a new purpose 1</li> <li>• Specific forms of flood barriers, appropriate for Southern Africa 1</li> </ul> <p>Adaptation to a warming climate:</p> <ul style="list-style-type: none"> <li>• Shift to drought-resistant crops 1 or use GM crops 1 and may make suggestions based on resource e.g. less rain-fed arable, more rough grazing, cotton, sugar cane, coffee beans grow better in hotter climates 1 (do not allow vineyards)</li> <li>• Introduction of irrigation 1</li> <li>• Abandon areas / migrate elsewhere when desertification occurs 1</li> <li>• Choose crops that are resistant to invasive insect / alien species 1</li> <li>• Diversify e.g. to tourism 1</li> </ul> <p>Point mark, either 1+1 or 1 + extension point for each Credit use of relevant examples Award 1 mark for applied use of Figure 3 (e.g. suggests actual crop changes).</p> <p>Do not credit</p> <ul style="list-style-type: none"> <li>• unrealistic ideas, e.g. covers over crops for rainfall protection</li> <li>• same point twice e.g. irrigation/change crop type/move away</li> </ul>	<p><b>2 + 2</b></p> <p><b>(4)</b></p>

Question Number	Answer	Mark
<b>3(b)</b>	<p>Question asks for <u>economic</u> impacts, so focus of answer should be on costs, employment (e.g. services/mining/tourism), transport, etc.</p> <ul style="list-style-type: none"> <li>• Suggests specific tourist losses ❶ and provides detail about damage to attraction (e.g. loss of flora/fauna linked with drought, loss of coral) ❶ or sea level rise in tourist hotspots (e.g. Alexandria) ❶ so loss of jobs and income from overseas ❶</li> <li>• Suggests specific healthcare costs e.g. impacts of malaria on workforce or from food shortage/disease ❶ and provides details on (e.g. climatic range for mosquitoes) ❶ or <u>specific</u> medical interventions, e.g. vaccinations ❶ or outlines how other parts of the economy suffer (e.g. funding for education / lower productivity) ❶</li> <li>• Suggests specific urban impacts (flooding/storms damage high rise housing/shanties and overwhelm sewers, electricity infrastructure damaged etc) ❶ and provides details (e.g. thermal expansion or storm surges leads to flooding of coastal cities) ❶</li> <li>• Cost of funding new infrastructure to supply water (e.g. Toshka Project in Egypt) ❶ because lack of water increases its price ❶</li> </ul> <p>Credit other valid explanations and associated examples and use of supporting data, such as about infrastructure, transport and services, etc. Possible consequences could be the result of drought, floods, hurricanes, sea-level rises. Credit use of specific locations.</p> <ul style="list-style-type: none"> <li>• One idea well developed might score full marks (e.g. tourism)</li> <li>• Only award 1 mark for a short list of simple statements that lacks any detail about the consequences of the impacts</li> <li>• Do NOT accept comments about farming.</li> </ul>	<b>(5)</b>

Question Number	Answer	Mark
<b>4 (a)(i)</b>	<b>C</b> Europe and the Americas	<b>(1)</b>

Question Number	Answer	Mark
<b>4(a)(ii)</b>	<p>Allow ① for definition of globalisation</p> <ul style="list-style-type: none"> <li>• Improves international links/ communications ①</li> <li>• Enables sharing of money/ideas/strategies ①</li> <li>• Providing connectivity with foreign investors / TNCs ① changing subsistence farming to tertiary opportunities ①</li> <li>• Gives migrants the means to send remittances/ news ①</li> <li>• Participation in social networks e.g. Facebook ①</li> <li>• Experience of global media e.g. Hollywood films/ football ①</li> <li>• Export new genres of music / film, e.g. African art ①</li> <li>• Creates knowledge/demand for global products e.g. Coca Cola ①</li> <li>• Helps overcome physical constraints ① leapfrogging the need for face: face transactions ①</li> <li>• May have other valid suggestions / associated examples / sensible extensions ①</li> </ul> <p>Do not credit points simply lifted from resource e.g. "entrepreneurs, technology start-up companies and investors" until used to answer the question.</p> <p><i>Links can be made to economic, social or cultural globalisation</i></p>	<b>(4)</b>

Question Number	Answer	Mark
<b>4 (b)</b>	<b>C</b> A reduction in long-distance journey times	<b>(1)</b>

Question Number	Answer	Mark
<b>4(c)</b>	<p>Allow ❶ for definition of globalisation</p> <ul style="list-style-type: none"> <li>• Explains how container shipping has led to growth in global trade ❶ may have data / examples of global distances travelled ❶</li> <li>• Explains role of aeroplanes in reducing travel time ❶ promoting global tourism ❶ or air-freight of perishable goods ❶</li> <li>• Increased sized planes → cheaper flights ❶ so more tourism e.g. Tallinn ❶ Role of transport TNCs e.g. Deutsche Bahn ❶ creating networks of associated companies ❶</li> <li>• Growth of global hub airports, e.g. Heathrow ❶ create network of trickle down subcontracting e.g. LSG SkyChefs ❶</li> <li>• High-speed railway networks have grown in importance ❶ Eurostar/Eurotunnel allow easy/cheap access ❶</li> <li>• Credit other valid transport suggestions that are developed in a way that links them with the acceleration of globalisation</li> <li>• Credit associated examples and use of supporting data.</li> </ul> <p>A list/series of simple statements should only receive 1 mark ('More people have cars, more/faster railways, more people are flying...') unless developed.</p>	<b>(5)</b>

Question Number	Answer	Mark
<b>5(a)(i)</b>	<p><u>0-5</u>: Numbers have risen/increased/grown ❶</p> <p><u>60-70</u>: Growth throughout the age group / Numbers have risen / increased / increased significantly or dramatically or similar phrase ❶</p> <p><i>(may note it is uneven but this is not required for the mark)</i></p>	<p><b>1 + 1</b></p> <p><b>(2)</b></p>

Question Number	Answer	Mark
<b>5(a)(ii)</b>	<p><u>0-5</u></p> <ul style="list-style-type: none"> <li>• Recent upsurge is 'echo' of high births 20-30 years ago, now having children ❶ This is linked to high post-WW2 births ❶</li> <li>• Migration of young Europeans has increased numbers of fertile people ❶ A8 enlargement in 2004 is a likely cause ❶</li> <li>• Better maternity/paternity pay/leave ❶</li> <li>• Availability of some free child care ❶</li> <li>• Increased availability / success rates of fertility treatment so more women are able to conceive ❶ gives details e.g. women with cancer / obese / epilepsy ❶</li> <li>• May suggest other valid social or economic reasons why births were lower / are higher now</li> </ul> <p>Do not allow</p> <ul style="list-style-type: none"> <li>• Non-UK ideas like improved infant mortality / vaccinations / children will care for elderly.</li> <li>• Comments about higher incomes or cost of living falling so people can afford more children.</li> </ul> <p><u>60-70</u></p> <ul style="list-style-type: none"> <li>• Improved healthcare due to free NHS (1948 onwards) ❶ or</li> <li>• Gives a detail of improved lifestyle (less smoking, improved diet with 5 a day / free swimming) ❶ perhaps linked to government spending ❶</li> <li>• Post-WW2 baby boom generation have reached retirement ❶</li> <li>• Gives a detail of improved healthcare e.g. cancer screening ❶</li> <li>• Fewer moving to Spain ❶</li> <li>• Credit other valid suggestions</li> </ul> <p><i>Award 1 mark for a list without detail to support the suggestions ('better health, better medicine, more spending').</i></p> <p>1 mark per valid idea, or 1+1 for a developed/linked point</p>	<b>(4)</b>

Question Number	Answer	Mark
<b>5(b)</b>	<ul style="list-style-type: none"> <li>• Increased dependency ratio might lower government revenue from working tax-payers ❶</li> <li>• Increased state pension payouts ❶ Need for increased/ compulsory pension contributions by workers ❶ or raising the pension age ❶</li> <li>• Increased cost to NHS of healthcare ❶ squeeze on funding for other services ❶ particularly as increased longevity (more 80+ and 90+) means further costs e.g. dementia care, care homes ❶ might have to recruit overseas for staff ❶ and need to set savings aside for long-term care ❶</li> <li>• Growing costs for providing services such as free bus pass / TV licence / housing adaptations ❶</li> <li>• Reduced housing availability raises prices ❶ potentially pricing younger, first-time buyers out of the market ❶ or government must fund new housing ❶</li> <li>• May note the challenges are not experienced evenly in the UK ❶ e.g. 'coastalisation' of the retired population ❶ may discuss implications for overseas communities e.g. Spain</li> <li>• Credit associated examples and use of supporting data.</li> </ul> <p><i>Award 1 mark for a list without detail to support the suggestions (e.g. 'increased housing, pensions, healthcare costs')</i></p>	<b>(4)</b>

Question Number	Answer	Mark
<b>6 (a)(i)</b>	<b>C</b> Food and Drink	<b>(1)</b>

Question Number	Answer	Mark
<b>6(a)(ii)</b>	<p>Ethical strategies can have social and environmental dimensions. Either or both can be commented on.</p> <p><u>Consumers</u></p> <ul style="list-style-type: none"> <li>• Not available everywhere/more expensive/less choice ❶ and associated price rises ❶</li> <li>• Local produce may have high environmental costs e.g. <b>heated greenhouses, so consumers' ethical standards</b> are not met ❶ might have to buy GM crops instead ❶</li> <li>• Consumers lose access to all-year supplies of seasonal food ❶</li> <li>• Food routed via depots so long journeys are still made ❶</li> <li>• Unrealistic for local area to support large population of a city ❶</li> </ul> <p><u>Producers</u></p> <ul style="list-style-type: none"> <li>• Poor farmers in LDCs lose trade ❶</li> <li>• May suggest examples or explain process more fully: less sales creates surplus etc. ❶</li> <li>• Notes wider context of difficulties e.g. poor farmers already struggle to access HIC markets (e.g. EU tariffs) ❶</li> </ul> <p>Credit other valid ideas in both cases.  <b>Don't award mark simply for 'no bananas' etc.</b>  Point mark or mark plus extension point</p>	<p><b>2</b></p> <p><b>2</b></p> <p><b>(4)</b></p>

Question Number	Answer	Mark
<b>6 (a)(iii)</b>	<p>Consumer products includes both goods and services, e.g. food / holidays / music etc. The answer may relate to ways to reduce the environmental impact of the <b>product</b> itself or its production, transport, sales, or disposal.</p> <ul style="list-style-type: none"> <li>• Carbon offsetting ① reduce carbon footprint ① through more efficient transport ① or less packaging used ① made from recycled materials ①</li> <li>• Made from bio-degradable material e.g. household cleaning products ①</li> <li>• Uses wood from sustainably managed forestry / re-planting e.g. Bounty paper towels ①</li> <li>• Radical use of technology, e.g. electric cars (e.g. i8) / wind-up radios ① or new energy-low technology, e.g. LED lightbulbs ①</li> <li>• Option to plant trees for holiday flights ①</li> <li>• Credit other claims for environmental sustainability</li> <li>• Allow production points if specifically linked to a product, e.g. organically grown cotton for clothes</li> <li>• <b>Do not all food miles or 'buying locally'</b></li> <li>• Do not allow fair trade unless specifically linked to environmental sustainability</li> <li>• Do not require example of product for the mark.</li> </ul>	<b>(3)</b>

Question Number	Answer	Mark
<b>6 (b)</b>	<ul style="list-style-type: none"> <li>• Fair trade ensures more money goes directly to farmers ❶ and may provide example ❶</li> <li>• Maximum one mark for general points about better health/education/ diet etc. ❶</li> <li>• Action was needed as TNCs have driven down prices e.g. bananas in price wars ❶ reduces exploitation.</li> <li>• Fair Trade Premium allows choice (empowerment) to farmers to improve local transport/storage/ education etc. ❶</li> <li>• Fair trade may provide guaranteed wages so irons out commodity price fluctuations e.g. from climatic variability / ENSO impacts ❶</li> <li>• May provide details of reasons why crops sometimes fall in value due to over-supply ❶ or global stock market / 'futures' bubbles ❶</li> <li>• Fair trade for manufacturing e.g. clothes helps tackle <b>some of the worst 'sweatshop' exploitation / two-speed world effects</b> associated with globalisation ❶ and may provide example ❶</li> </ul> <p>Credit acknowledged limitations of fair trade ❶            Credit associated examples and use of supporting data.            For full marks, must establish some link with global inequality such as breaking poverty cycle, afford health care etc.</p>	<b>(4)</b>

Question Number	Indicative content	
7 (a)	<p><b>Population predictions for urban areas</b> – Answers may be structured by region. Figure 7 shows massive rise in east Asia from 18 to 79 million and increases in other areas e.g. 7 to 49m for south-eastern Asia, 4 to 58m for southern Asia, and 0.5 to 25m Sub-Saharan Africa.</p> <p><b>Increased disaster risk</b> – This invites (but does not necessitate) applied use of the disaster risk equation with discussion of increased vulnerability and decreased capacity to cope, but note it also implies scope for how risk could decrease. Stronger answers might also contrast different areas. Flooding, earthquakes, volcanoes, landslides etc. can be discussed and linked with urban growth in any of the locations shown).</p> <p>Increases are for urban areas so expect comments to explain how this will increase risk:</p> <p>Urban Causes</p> <ul style="list-style-type: none"> <li>• Expanding the area of impermeable surfaces therefore increasing overland flow so decreasing through-flow / groundwater flow so flood risk grows, also decreased vegetation cover which reduces interception</li> <li>• Drainpipes and sewers accelerate water flow towards rivers so increasing the risk of flash floods</li> </ul> <p>Vulnerability</p> <ul style="list-style-type: none"> <li>• More people will be moving into informal housing in high-risk areas (flood plains, steep slopes). Some may be higher-income and so have more property to lose.</li> <li>• Issue of losses to downtown/CBD/government so national economic impacts and slow responses to disasters</li> <li>• Accept the idea that there may be increased technological and planning ability to mitigate risk, e.g. Manila sea walls.</li> </ul> <p>Capacity to Cope</p> <ul style="list-style-type: none"> <li>• Some areas have few people at risk in 2010, so may lack defences / are unprepared. Issue of slow evacuation especially of poor</li> <li>• Lack of traditional knowledge about previous disasters as growth so rapid</li> <li>• Large numbers of young people who may not be aware / educated about the risks</li> <li>• Accept the idea that increased use of social media / access to mobiles / GPS increases capacity to cope, e.g. warnings</li> <li>• Expect detailed knowledge about Philippines but may use wide range of examples from Fig 7 locations. Do not accept reference to other locations.</li> </ul>	
Level	Mark	Descriptor
<b>Level 1</b>	1-4	Poorly structured. Asserts that more people will be affected by disasters in the future in Asia and Africa. Likely to discuss developing countries generally. Basic use of ideas from Fig 7. Geographical terminology is rarely used. There are frequent written language errors.

<b>Level 2</b>	5-7	Some structure. Suggests how different urban growth rates and/or the consequences could affect disaster risk. Top of the band answers are likely to use evidence from figure 7. Some geographical terminology is used. There are some written language errors. <i>Max L2 with no reference to urban</i>
<b>Level 3</b>	8-10	Well-structured answer that suggests a range of ways in which urban population growth has caused disaster risk to increase. May identify a good range of disaster risks or suggest that there is likely to be an increase in the ability to mitigate the flood risk. Uses Figure 7 in detail. Appropriate geographical terms show understanding. Minor language errors.

Question Number	Indicative content
7 (b)	<p><b>Different physical factors</b> – natural factors and processes that lead to flooding (either generally, or for chosen examples) include:</p> <ul style="list-style-type: none"> <li>• <u>Relief</u> - steep sided valleys and faster overland flow, low-lying islands like Maldives, Tuvalu, river delta areas, e.g. Bangladesh)</li> <li>• <u>Geology</u> and Vegetation – more overland flow and limited infiltration because of e.g. impermeable rock in Boscastle, interception by vegetation, or saturated ground because of intense rainfall</li> <li>• <u>Latitude or location</u> - e.g. UK in path of Atlantic depressions / Philippines in hurricane belt / monsoon season in South Asia / storm surges at coast, e.g. Bangladesh</li> <li>• <u>ENSO cycles</u> – flooding for South America during El-Nino and SE Asia / Australasia during La Nina</li> <li>• Tsunamis caused by plate tectonic movement.</li> <li>• GW increases sea temperatures contributing to more intense rainfall, as well as coastal flooding because of thermal expansion</li> <li>• There are many other possibilities.</li> </ul> <p>Only credit human factors like urbanisation when clearly showing their contribution relative to the physical factors. This is only likely with top L4 responses.</p> <p><b>Global pattern of flood risk</b></p> <ul style="list-style-type: none"> <li>• The world-scale focus ideally requires broad global distributions to be identified, e.g. monsoon climate and changing rainfall patterns (Pakistan, Bangladesh), hurricane/typhoon belt (Philippines), areas periodically affected by ENSO cycles, mid-latitude depressions affecting UK and western and Eastern Europe.</li> <li>• Focus might sometimes be inferred (e.g. for L3) even though examples could be on a national scale, <ul style="list-style-type: none"> <li>◦ i.e. coastlines, e.g. Bangladesh, Netherlands</li> <li>◦ i.e. large flood plains, e.g. Mekong, Indus, Mississippi</li> </ul> </li> <li>• Specific examples could include frequent flooding in Philippines due to typhoons; flooding in California during El Nino years, or UK flooding due to mid-latitude depressions.</li> </ul>

Level	Mark	Descriptor
<b>Level 1</b>	1-4	Little structure. Has one or two descriptive ideas that may relate to rainfall, rivers and/or coasts. Factors might be generalised or inaccurate. Frequent written language errors.
<b>Level 2</b>	5-8	Some structure. Describes some physical factors that cause flooding but may not explain the processes. Uses place locations of where floods tend to occur. Some geographical terminology is used. Some written language errors.
<b>Level 3</b>	9-12	Structured account. Explains physical processes/factors that cause flooding. Uses a range of locations to show floods happen globally. Geographical terms show understanding. Written language errors are minor.
<b>Level 4</b>	13-15	Well structured. Explains range of physical factors showing good understanding of process. May show awareness of other factors linked to physical processes. Exemplification clearly shows global distribution of floods. Wide range of accurate geographical terms. Written language errors are rare.

Question Number	Indicative content	
8 (a)	<p><b>Becoming more widespread:</b> Figure 8 clearly shows take-up in Asia and not just HICs such as EU and USA. Although not signatories to Kyoto, China and other nations are taking action too.</p> <p>Possible <b>reasons</b> include:</p> <ul style="list-style-type: none"> <li>• Fuller understanding of research / evidence for climate change</li> <li>• Growing global lead by G2 (China / US) to accept scientific evidence</li> <li>• Financial incentives from carbon credit schemes, e.g. EU ETS</li> <li>• Own experience and concern about extreme weather events and dangerous environment (e.g. smog in Chinese cities)</li> <li>• Mitigation is sometimes more cost effective than adaptation</li> <li>• Political pressure from own citizens to take responsibility for emissions.</li> <li>• Switch away from reliance on fossil fuels (price, pathways etc).</li> <li>• Lower costs of technologies like wind turbines as economies of scale, and reduced operation and maintenance costs per unit as turbines grow larger.</li> <li>• Opportunity for capturing green technology market (e.g. Chinese solar panels)</li> </ul> <p><b>Mitigation schemes such as these</b></p> <ul style="list-style-type: none"> <li>• Figure 8 shows Kyoto agreement and a range of regional carbon trading schemes. Note that candidates are not expected to have specific knowledge of the Asian schemes.</li> <li>• Credit discussion for other types of mitigation scheme with global take-up (wind turbines / renewables etc.)</li> <li>• Also allow discussion of strategies that countries/businesses might adopt to help them reach targets/reduce emissions (such as Marks and Spencer Plan A, hybrid cars (Nissan LEAF, Lexus etc), green taxation etc)</li> </ul> <p><i>Do not over credit material extracted from Figure 8</i></p>	
Level	Mark	Descriptor
<b>Level 1</b>	1-4	Little structure. May offer 1 or more simple reasons or assertions that more people / countries in general are taking action on climate change. Might focus on describing schemes or might ignore mitigation. Geographical terminology rarely used. Frequent language errors.
<b>Level 2</b>	5-7	Some structure. Gives some valid suggestions of why mitigation measures are being adopted by a wider range of nations than in the past. Examples might show current impacts of climate change as motivations for mitigation. Some geographical terminology is used. Some written language errors.
<b>Level 3</b>	8-10	Well-structured account. Suggests a range of reasons (political, economic, social, technological) for growing global uptake of mitigation. May go beyond Fig 8 to add own examples or types of strategy. Appropriate geographical terms show understanding. Written language errors are minor.

Question Number	Indicative content
8 (b)	<p><b>Human activity</b> adds gases to the atmosphere</p> <ul style="list-style-type: none"> <li>• Carbon dioxide - from burning fossil fuels, deforestation removes carbon sink, less absorbed by warmer oceans;</li> <li>• Methane – from agriculture, waste;</li> <li>• Nitrous oxides - from industry / vehicles;</li> <li>• CFCs - from older fridges especially in developing world, and air con systems;</li> <li>• Some GHG are more potent than others (e.g. methane is 17x more powerful than CO<sub>2</sub>)</li> </ul> <p>• Further discussion about positive feedback loops leading to further warming should be credited.</p> <ul style="list-style-type: none"> <li>○ Albedo changes result in further absorption of heat in Arctic etc.;</li> <li>○ Permafrost melting;</li> <li>○ Warmer oceans allow melting of frozen methane hydrates;</li> <li>○ Water vapour – from greater evaporation if oceans get warmer;</li> </ul> <p>Alternatively, may take an activity approach: transport / agriculture/ waste / electricity generation/waste disposal etc.</p> <p><b>Enhanced greenhouse effect –</b></p> <ul style="list-style-type: none"> <li>• For top of level 3, credit explanation and diagrams of how humans have enhanced the natural greenhouse effect by trapping outgoing long-wave infra-red radiation reemitted by the earth.</li> <li>• Additional flows of GHGs have increased their concentrations beyond naturally-occurring levels (280ppm in 1750 at start of industrial revolution).</li> <li>• Credit temperature data and projections linked with rising GHG concentrations.</li> </ul> <p>Do not credit arguments explaining effects/impacts of greenhouse effect (such as desertification or tourism). Do not credit references to ozone hole / depletion.</p>

Level	Mark	Descriptor
<b>Level 1</b>	1-4	Little structure. One or two generalised statements, perhaps about factories or fossil fuels and more CO <sub>2</sub> . Operation of greenhouse effect largely unclear or ignored. Geographical terminology rarely used. Frequent written language errors.
<b>Level 2</b>	5-8	Some structure. Describes a limited range of activities relating to one or two specified greenhouse gases. Likely to recognize the operation of the greenhouse effect but might still be unclear. Some geographical terminology is used. Some written language errors.

<b>Level 3</b>	9-12	Structured account of a range of ways in which human activity generates a range of greenhouse gases. At top of level likely to start explaining how these extra GHGs enhance the natural greenhouse effect. Geographical terms to show understanding. Written language errors are minor.
<b>Level 4</b>	13-15	Well-structured account explains a wider range of activities covering a range of GHGs. Clear explanation of the greenhouse effect and specific details of the ways it been enhanced, which may include feedback loops. Uses appropriate geographical terms and exemplification to show understanding. Written language errors are rare.

Question number	Indicative content
9 (a)	<p><b>Global connectedness</b> – Fig. 9 shows countries ranked according to the role exports play, their level of ICT use (per capita) and global mobility of their populations.</p> <p><b>Estonia’s strength is mobility;</b>  <b>China’s weak spot is ICT;</b>  Some may attempt an overall rank or average, credit this.</p> <p><b>Reasons</b> – May offer explanation linked to any of the stimuli shown</p> <p><u>Estonia</u></p> <ul style="list-style-type: none"> <li>• An A8 country with access to EU markets and lower wages than elsewhere in Europe which may explain high % manufacturing;</li> <li>• High % of young have left for better paid jobs elsewhere in EU e.g. UK, Germany</li> </ul> <p><u>China</u></p> <ul style="list-style-type: none"> <li>• <b>Known for its ‘switched-off’ censorship; lack of access to internet etc. for rural poor</b></li> <li>• Restrictions in foreign travel continue for all but elite;</li> <li>• <b>Position as global “workshop” changing as cheaper locations selected by some TNCs;</b></li> </ul> <p><u>Iceland</u></p> <ul style="list-style-type: none"> <li>• Isolated and has widely dispersed population both within country and globally (so this has spurred ICT use).</li> <li>• Beauty of natural environment discourages industrial / manufacturing in favour of primary sector / tertiary sector</li> </ul> <p><u>Rwanda</u></p> <ul style="list-style-type: none"> <li>• Lowest in all rankings: may be switched off for development, lacks stimulus of TNC investment, landlocked so trade options restricted. Recent civil war and genocide. Role of climate change holding back development. Over reliance on agriculture, both subsistence and cash crops.</li> </ul> <p>Credit all sensible suggestions that draw on own knowledge in the context of Figure 9.</p> <p>Do not expect specific knowledge of countries and accept generalisations about eastern Europe or sub-Saharan Africa.</p>

Level	Mark	Descriptor
<b>Level 1</b>	1-4	One or two descriptive points are made about countries being <b>connected, or not. May identify generic reasons (e.g. ‘government’ allows people to migrate/use internet, or not)</b> . Geographical terminology is rarely used. There are frequent written language errors.

<b>Level 2</b>	5-7	Some structure. Some discussion of reasons based on use of the data. Identifies how individual factors drawn from the index have impacted <b>on level of "connectedness" for some of the countries in figure 9.</b> Some geographical terminology is used. There are some written language errors.
<b>Level 3</b>	8-10	Structured account. Analyses data either by country or index to explain varying scores in figure 9. May also refer to other examples or <b>own knowledge of 'switched-on switched-off' places.</b> Appropriate geographical terms show understanding. Written language errors are minor.

Question Number	Indicative content
9 (b)	<p><b>Global groupings</b> – Answers may show knowledge of OECD, NICs, OPEC, LDCs (LEDCs) and EU and NAFTA trade blocs. Credit discussion of any other valid grouping e.g. BRICs, ex-soviet states, G7/8, UN, NATO, Security Council, Commonwealth.</p> <p><b>Reasons:</b></p> <ul style="list-style-type: none"> <li>• <b>Political interests</b> why countries join groups like EU or NATO. Also <b>political actions (e.g. OPEC nations’ control of oil supplies/prices)</b>. May discuss the political power of some OECD/EU nations within World Bank / WTO might figure (e.g. USA).</li> <li>• <b>Wealth</b> The answers should show awareness of how wealth differentials result in economic groupings (LDCs, HICs etc.) or economic development (e.g. NICs/RICs, BRICS)</li> <li>• <b>Trade bloc benefits</b> (NAFTA: different benefits for Mexico/USA; CARICOM, ASEAN etc.)</li> <li>• <b>Historical</b> reasons, such as colonialism and/or common culture/language: e.g. Commonwealth or ex-Soviet states</li> <li>• <b>OPEC –</b> both economic and political elements, e.g. control over oil supplies / prices,</li> </ul> <p>Credit examples and other approaches where relevant</p>

Level	Mark	Descriptor
<b>Level 1</b>	1-4	Little structure. Recognises that groups exist (e.g. rich/poor countries) globally but no real evidence to back this up. Frequent written language errors.
<b>Level 2</b>	5-8	Some structure. Describes the characteristics / formation of different groupings and may name the members for example. Some geographical terminology is used. There are some written language errors.
<b>Level 3</b>	9-12	Structured account that explains how at least two types of global groups have formed. Explains why named members benefit from their formation, or from being in the group. Geographical terms show understanding. Written language errors are minor.
<b>Level 4</b>	13-15	Well-structured account which explains why there are different types of groups. May explain why some countries are members of different types of groups. (For example, how political interests or historic factors have led some countries to join global groups). Uses appropriate geographical terms and exemplification to show understanding. Written language errors are rare.

Question Number	Indicative content	
<b>10 (a)</b>	<p><b>Changing size</b> – all have grown except Ireland.</p> <ul style="list-style-type: none"> <li>• The biggest increase comes from Poland.</li> <li>• Post-colonial migrant communities (India, Pakistan) show significant growth. Other EU member communities have grown.</li> </ul> <p><b>Suggest reasons</b></p> <ul style="list-style-type: none"> <li>• Generic reasons are likely to include an assertion that UK is ‘soft touch’ for migration / needs workers (does not matter who) / attracts people wanting higher wages / free healthcare, etc. English language, reputation of UK universities, London is global hub and world city, reputation of freedom of speech, media/film/music scene etc, jobs prior to 2008 recession</li> <li>• Specific reasons include: <ul style="list-style-type: none"> <li>○ post-Colonial links between Indian, Pakistan and the UK, joining family members, elite migrants encouraged like doctors (compulsory case study);</li> <li>○ Accession of Poland and other A8 countries in 2004 allowed movement; UK (unlike most other EU members) allowed economic migration post 2004;</li> <li>○ Similarly Nigeria and South Africa (also ongoing social/economic/political issues in these two countries have encouraged continued migration to UK. Some may be asylum seekers)</li> <li>○ <b>May suggest reasons for Ireland (e.g. ‘Celtic Tiger’ economy drew migrants back home in early 2000s, peace dividend post Good Friday agreement)</b></li> </ul> </li> </ul>	
Level	Mark	Descriptor
<b>Level 1</b>	1-4	One or two generalised reasons are offered about why more migrants have moved to the UK. May not distinguish between different communities. Geographical terminology rarely used. Frequent written language errors.
<b>Level 2</b>	5-7	Some structure. Offers possible reasons for at least two communities growth or decline. May use data in support. Some geographical terminology is used. There are some written language errors.
<b>Level 3</b>	8-10	Structured answer suggesting a range of specific reasons for the significant change in size shown for several contrasting communities. Likely to use data in support. Appropriate geographical terms show understanding. Written language errors are minor.

Question Number	Indicative content									
<p><b>10 (b)</b></p>	<p><b>Two migration flows</b></p> <ul style="list-style-type: none"> <li>• Candidates may cover two different groups into one country; they may look at post-colonial flows to the UK (e.g. Caribbean migration to the UK) or more recent EU migration covered in compulsory case studies (e.g. Poland to UK; UK to Mediterranean or elsewhere).</li> <li>• Equally they might look at migration into two different countries (e.g. Caribbean to UK and UK to Spain).</li> <li>• Does not have to refer to UK so credit any other <u>international</u> example (economic migration, refugees, e.g. North Africa to Italy and Malta etc.)</li> <li>• May cover migration caused by different reasons (e.g. economic, asylum seekers)</li> </ul> <p><b>Examine the impacts</b></p> <ul style="list-style-type: none"> <li>• Host/gaining region must be the focus in both cases. Candidates might decide to organise their response around type (economic / social) or outcome (positive / negative).</li> </ul> <table border="1" data-bbox="316 875 1444 1771"> <thead> <tr> <th data-bbox="316 875 507 913"></th> <th data-bbox="515 875 951 913">Positive</th> <th data-bbox="959 875 1444 913">Negative</th> </tr> </thead> <tbody> <tr> <td data-bbox="316 913 507 1200"><b>Political / Economic</b></td> <td data-bbox="515 913 951 1200"> <ul style="list-style-type: none"> <li>○ Tax revenue, do unpopular jobs, create own businesses and become employers. Pay national insurance but may not use NHS much.</li> <li>○ Builds global links and understanding</li> </ul> </td> <td data-bbox="959 913 1444 1200"> <ul style="list-style-type: none"> <li>○ May hold down wages, restrict job availability for host population, claim benefits, housing costs rise.</li> <li>○ Costs of translation etc.</li> <li>○ Loss of remittance to host economy</li> </ul> </td> </tr> <tr> <td data-bbox="316 1200 507 1771"><b>Social</b></td> <td data-bbox="515 1200 951 1771"> <ul style="list-style-type: none"> <li>○ Likely to be young (e.g. A8 migration to UK) so reduces impact of ageing population, may help keep rural schools/shops open (e.g. Scotland, Dorset, Norfolk), cultural richness (food, music, sport etc.), churches benefit from new members.</li> <li>○ Migrants to Mediterranean may be older, may volunteer etc.</li> </ul> </td> <td data-bbox="959 1200 1444 1771"> <ul style="list-style-type: none"> <li>○ Overcrowded schools, hospitals, housing. Host population feels <b>"overwhelmed"</b>.</li> <li>○ Enclaves may not mix (e.g. poor language acquisition in Spain),</li> <li>○ Racism, fear. Rise of more right wing parties and opinions.</li> </ul> </td> </tr> </tbody> </table> <p>Credit changing attitudes to migration through economic decline and growth.</p> <p>Do not credit impacts on <b>source</b> countries If more than two, mark all and credit the best.</p>		Positive	Negative	<b>Political / Economic</b>	<ul style="list-style-type: none"> <li>○ Tax revenue, do unpopular jobs, create own businesses and become employers. Pay national insurance but may not use NHS much.</li> <li>○ Builds global links and understanding</li> </ul>	<ul style="list-style-type: none"> <li>○ May hold down wages, restrict job availability for host population, claim benefits, housing costs rise.</li> <li>○ Costs of translation etc.</li> <li>○ Loss of remittance to host economy</li> </ul>	<b>Social</b>	<ul style="list-style-type: none"> <li>○ Likely to be young (e.g. A8 migration to UK) so reduces impact of ageing population, may help keep rural schools/shops open (e.g. Scotland, Dorset, Norfolk), cultural richness (food, music, sport etc.), churches benefit from new members.</li> <li>○ Migrants to Mediterranean may be older, may volunteer etc.</li> </ul>	<ul style="list-style-type: none"> <li>○ Overcrowded schools, hospitals, housing. Host population feels <b>"overwhelmed"</b>.</li> <li>○ Enclaves may not mix (e.g. poor language acquisition in Spain),</li> <li>○ Racism, fear. Rise of more right wing parties and opinions.</li> </ul>
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<b>Level 1</b>	1-4	Limited identification of any recognisable migration(s) or their impacts. May assert arrival of Poles in UK has caused unspecified conflicts. Geographical terminology is rarely used. There are frequent language errors.
<b>Level 2</b>	5-8	Some structure. Basic description of migration flows to the same or different countries. A range of impacts is identified but lacks detail. Some geographical terminology used. Some written language errors.
<b>Level 3</b>	9-12	Structured account. Expect two different migration flows to be examined, but allow max 10 if only one done in depth. Starts to show classification of impacts (by positive/negative, economic/social). Provides supporting detail of impacts. Geographical terms show understanding. Written language errors are minor.
<b>Level 4</b>	13-15	Well-structured. Two migrations are examined in depth to clearly show contrasting impacts. Good exemplification and supporting detail for both. May comment on relative scale of impact. Uses appropriate geographical terms to show understanding. Written language errors are rare.



