Mark Scheme Summer 2009

GCE Geography (8GE01)

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Contents

6GE01 Global Challenges Mark Scheme

Question Number	Answer	Mark
1 (a)	Risk = <u>Hazard x Vulnerability</u> or = <u>H x V</u> Capacity to cope C *1 mark for the complete top line.* *1 mark for the second line (also allow resilience).*	(2)

Question Number	Answer	Mark
1 (b)	• Tropical cyclone / tropical storm / hurricane / typhoon / storm / wind storm. • Volcano/volcanicity. Question asks for completion of the six major natural hazard types, as per teaching of the Specification. Do not accept: famine, tsunami, tornado, etc.	(2)

Question Number	Answer	Mark
1 (c)	'Local' = student's own locality <u>or</u> a specified location elsewhere (e.g. named disaster hotspot). Balance of answers may range from an entirely physical process response to a more detailed examination of what is at risk. Credit either approach (the best answers are likely to cover both aspects in any case). • Award ❶ mark for <u>each</u> outlined hazard that is appropriate to the named location and ❶ mark for any extension or detail (e.g. of physical process or frequency data) • Award ❶ mark for <u>each</u> aspect of vulnerability that is discussed (e.g. population size, assets at risk) List ('drought, floods and snow in Ashford') = 1 mark.	(5)

(Total 9 Marks)

Question Number	Answer	Mark
2(a)	Drought	(1)

Question Number	Answer	Mark
2 (b)	Flood: Award ❶ mark for a basic impact e.g. "crops cannot grow under water". Drought: Award ❶ mark for a basic impact e.g. "crops cannot grow without water". Award an additional ❶ mark for an extended point (e.g. biological stresses or additional problems with food aid distribution) or a well-chosen example.	(4)

Question Number	Answer	Mark
2(c)	• Rain-fed farming will suffer; may have subsistence or cash crop ideas. • Low-lying farming areas may be lost to the sea; e.g. parts of Nile delta. • Desertification e.g. Sahel; so in lower biological productivity yields (or rain increases are projected). • More storms and cyclones can impact on coastal aquaculture; e.g. Madagascan prawns. Award ❶ mark for each basic impact <u>on agriculture</u> that is outlined (so do not credit simple statement "more drought") and award ❶ mark for any extension / example of each idea.	(3)

6

Question Number	Answer	Mark
2(d)	*NB Question asks why <u>increases</u> are occurring.* • Global warming = sea level rise ❶ because of ice sheet melt ❶ and has e.g. of vulnerable area i.e. Maldives ❶ • May mention important role of thermal expansion ❶ • Increased storms due to warmer temperatures ❶ e.g. 26C reached more often in hurricane belt ❶ • More population at risk due to natural increase ❶ may provide details / DTM ideas ❶ • May outline <u>increased</u> assets at risk ❶ • El Nino causes periodic increases in flooding ❶ e.g. South America floods during El Nino years ❶ • Migration to coastal areas ❶ may provide examples ❶ • Deforestation so less rainwater intercepted ❶ and may offer e.g. or process detail e.g. overland flow rates ❶ • Urbanisation causes floods ❶ and may offer example or extend process detail e.g. impermeability ❶ • Mangrove removal ❶ e.g. for prawn aquaculture ❶ *Do not credit 'because of global warming' alone.* *Do not credit idea of better reporting of disasters because the question is stated as fact.*	(4)

(Total 12 Marks)

Question Number	Answer	Mark
3 (a)	A (2.4 million)	(1)

Question Number	Answer	Mark
3(b)	• Observed line steeper fall than predicted line. • Observed line is less smooth / fluctuates more. • Quantification given to either of above. • Trends start off similar until around 1975.	(3)

Question Number	Answer	Mark
3(c)	• Global warming *happening faster than predicted* ❶ • Pollution higher than predicted / GHG rising more steeply than predicted ❶ more cars or people around than we expected / or has a similar general idea ❶ may know role of China & India / has other example ❶ • Lack of understanding of the phenomenon / imperfect knowledge in the past ❶ equipment / computer models weren't good enough in 1950s to get it right ❶ • Combined effects/tipping point effects are speeding up changes ❶ extensions include positive feedback ❶ albedo changes ❶ or permafrost methane release ❶ • Other unforeseen changes e.g. sunspots ❶ volcanoes ❶ these may be linked to the unpredicted 'anomalies' ❶ • Problems with ice core samples e.g. contamination ❶ • May additionally discuss gases other than CO2 ❶ Do not credit erroneous 'ozone' explanations or Milankovitch ideas (wrong time scale).	(4)

Question Number	Answer	Mark
3(d)	• Earth orbit / Milankovitch cycles ❶ with details of changed circular to elliptical orbit ❶ ; axial tilt cycle ❶ • Solar output variation ❶ e.g. sun spot activity follows irregular warming cycle that lasts about 11 years ❶ and longer cycles (Maunder) ❶ • Major volcanic eruptions leading to a brief global cooling ❶ due to ash and dust particles being ejected high into the atmosphere, ❶ e.g. 1883 Krakatoa ❶ • Cosmic collision ❶ e.g. dinosaur mass extinction ❶ • Accept El Nino / La Nina (short-term changes) ❶ and any located extension of this idea ❶ *Maximum 3 for one cause only.*	(4)

(Total 12 Marks)

Question Number	Answer	Mark
4(a)	Any three of the following: • Coastal. • More towards East coast/less in West. • Cluster near Beijing. • Cluster around Shanghai. • Cluster in Hong Kong / Guangdong province. • Low growth more than 1500 km inland / interior / centre.	(3)

Question Number	Answer	Mark
4(b)	• Rural-urban migration ❶ and may have details ❶ • Generic push factors include rural overpopulation, disasters, other problems ❶ and award ❶ for specifics e.g. role of farming reforms • Generic pull factors include jobs, health, education ❶ and award ❶ for specifics e.g. TNC work opportunities in well-connected global hubs or Beijing Olympics jobs • Transport / technology improvements aid migration ❶ • Natural increase plays a role in city growth ❶	(4)

Question Number	Answer	Mark
4©	• Migrants lack money so rely on self-built housing ❶ • Allow 'too many people' if it is linked to something specific e.g. lack of jobs thus poverty & poor housing ❶ • Pay is often low in 'sweat-shops' so migrants cannot move into better housing ❶ as part of the cycle of urbanisation ❶ • Developing nations lack sufficient planned housing ❶ and vital infrastructure such as sewers ❶ • Developed world mega-cities also have problems with homelessness ❶ • Credit idea than conditions are an improvement on life in the countryside so slums are tolerated ❶ Award ❶ mark for any convincing detail for mega-cities named (e.g. uses a named slum such as Dharavi in Mumbai; or quotes data e.g. number of arrivals per day).	(4)

(Total 11 Marks)

Question Number	Answer	Mark
5 (a) (i)	C (North America-Europe)	(2)

Question Number	Answer	Mark
5(a)(ii)	• Are rich / are developed/are global hubs/are switched-on places ❶ so they have better access to/more money for/more need for technology ❶ • Affluence means a better market for ICT providers ❶ • Skills or resources have attracted TNCs ❶ who bring FDI that pays for connectivity ❶ • Political decisions may have been made to get 'switched-on' or stay 'switched-off' ❶ e.g. China restricts internet access ❶ e.g. EU countries are more connected due to trade bloc links ❶ • Migration from some places builds connections to keep families in contact ❶ may have examples ❶ • Physical difficulties e.g. continentality (Chad) ❶ • No need / no people in some places / wilderness ❶ Answers should relate to Figure 5 & internet flows. Discussion of other networks (e.g. EasyJet) may gain limited credit for generic ideas e.g. affluence.	(4)

Question Number	Answer	Mark
5(b)	• Aeroplanes make it possible to travel world more quickly ❶ low-cost airlines / jets ❶ • Instantaneous connectivity achieve telegraph ❶ telephone ❶ and internet ❶ • Container shipping vital for trade flows of manufactured goods ❶ e.g. China-UK ❶ • Sailing ships made it easier to cross Atlantic ❶ • High-speed rail links ❶ e.g. Eurostar ❶ • Global 'messaging' by TNCs ❶ so sense of global village develops ❶ • Credit any other sensible interpretations of question and any extension made. For full credit, transport and technology should be linked to idea of <u>changing</u> speed of travel / <u>heightened</u> sense of nearness / other shrinking world ideas. Maximum 3 for a list of different technologies and transport, but no explicit change.	(4)

(Total 9 Marks)

Question Number	Answer	Mark
6 (a)	D (10 million)	(1)

Question Number	Answer	Mark
6(b)	• UK has a low birth rate ❶ and may offer reasons such as more women working ❶ or availability of contraception ❶ • Since EU enlargement in 2004 UK has been open to A8 workers ❶ & data may be known of numbers ❶ • Award ❶ for generic description of UK pull factors or assertion that UK needs workers for jobs • Youthful A8 migrants have pushed up UK's CBR ❶ helping reverse the indigenous fertility decline ❶ *For full marks, answer must discount natural increase as well as agreeing that migration matters.*	(4)

Question Number	Answer	Mark
6 (c)	*Reasons should relate to economic migrants.* • More jobs in cities (o not accept 'more places'). • Agricultural 'hot-spots' for farm/processing work. • Service (hotel) jobs (or similar suggestion) exist in rural or urban areas. • Credit idea of existing community in place (can help in finding work). • Credit idea of low <u>economic costs</u> e.g. housing. • Any other sensible economic suggestion.	(2)

Question Number	Answer	Mark
6 (d)	Economic costs may include (there could be others): • A reduced population / lack of a suitable workforce to help the economy prosper ❶ may extend idea by specifying the age ranges typically lost (18-30) or suggest there are GDP losses ❶ • Money spent training (doctors) wasted ❶ • Negative multiplier effect as less spent in shops ❶ services for 18-30 (nightclubs) suffer especially ❶ Economic benefits may include (there could be others): • Unemployment was high and has eased, so less money spent on social security/housing ❶ • Remittances received ❶ figures may be known ❶ Max 4 if only costs <u>or</u> benefits.	(5)

(Total 12 Marks)

Question Number		Indicative content
7 (a)		**Consequences.** Credit discussion of both fatalities/injuries and economic losses. Credit discussion of other earthquakes not in the list.
		Suggested reasons :
		• Level of development and hence quality of structures (e.g. Bam).
		• Magnitude of different earthquakes (we are not told this).
		• Degree of preparedness, which may also vary over time.
		• Response, which is related to development level but also geographical isolation / political will to accept help.
		• Time of day e.g. Izmit struck at night.
		• Secondary hazards such as fire and disease.
		• May see that some countries have improved in response over time as they have become more developed (e.g. US).
Level	Mark	Descriptor
Level 1	1-4	Describes a few differences and makes one or two generalised points with limited explanation at top end. Geographical terminology is rarely used. There are frequent written language errors.
Level 2	5-7	Some structure, likely to comment on fatalities and economic losses are with some explanations but not always in depth. Some geographical terminology is used. There are some written language errors.
Level 3	8-10	A well-structured, detailed range of reasons are provided, with effective use of examples from the Figure and possibly elsewhere. Appropriate geographical terms show understanding. Written language errors are minor.

Question Number	Indicative content
7 (b)	**Geophysical** – volcanic, earthquakes – and possibly landslides, tsunami. **Distribution** – tectonic hazards can be explained in relation to plate boundaries and volcanic hot spots. Mass movements are harder to generalise about – many occur in geologically young and tectonically active mountains (or links could be made with storm / hurricane belts as trigger). **Hazards** – some candidates will choose to additionally describe and explain the human dimensions of the distribution. *Centre approaches to teaching this topic may vary. Some candidates will deliver essentially a 'physical geography' essay; others will emphasise the overlap between population distribution patterns and boundary hazard patterns (and will as result have less to say about convection cells and slab pull, etc.). Either approach is acceptable.*

Level	Mark	Descriptor
Level 1	1-4	Little structure. Has one or two descriptive ideas relating to a single hazard (probably earthquakes). Geographical terminology is rarely used. There are frequent written language errors.
Level 2	5-8	Some structure and provides partial explanations of the distribution of one of the major geophysical types or superficial explanation of several. Limited details or examples and generalised. Some geographical terminology is used. There are some written language errors.
Level 3	9-12	Structured account explaining the distribution of two types of g-p hazard. Examples & explanation are specific (e.g. names three plate boundary types). Geographical terms show understanding. Written language errors are minor.
Level 4	13-15	Structured detailed, wide ranging account. Physical processes are well-explained e.g. compares deep-focus and shallow-focus EQs). Good use of examples. Uses appropriate geographical terms and exemplification to show understanding. Written language errors are rare.

(Total 25 Marks)

Question Number		Indicative Content
8 (a)		**Severity of impacts** – early impacts limited to more vulnerable or sensitive places, as shown in Figure 8 (expect candidates to have own examples as well e.g. Maldives). Biome shifts (or start of Spring, etc) will become more dramatic as temperatures rise and more environments will experience more significant changes. Later impacts brought by a 5C rise would have significant impacts on even the most resilient environments and species, as well as fully globalising impacts, through greater sea-level rise. The best answers may distinguish between intensified impacts on sensitive places (e.g. coral reefs may be taken beyond adaptive threshold); and the extensification of impacts to previously unaffected places as temperatures rise. **Environmental impacts** – there are many examples besides those if Figure 8. Popular additional themes might include: Arctic ice; hurricanes frequency; biome, soil and disease zones.

Level	Mark	Descriptor
Level 1	1-4	Little structure. Lists a few generalised impacts. Geographical terminology is rarely used. There are frequent written language errors.
Level 2	5-7	Some structure; relies on Figure 8 with some attempt to suggest reasons for increased severity. At top of level may provides <u>additional impacts</u> not shown in Fig. 8. Some geographical terminology used. Some written language errors.
Level 3	8-10	Well-structured account that provides explanations for increasing severity. Refers to specific physical processes and environments and may develop tipping point ideas. Appropriate geographical terms show understanding. Written language errors are minor.

Question Number		Indicative content
8 (b)		**Players** can be individuals or key groupings of people including government, businesses etc. Players / nations need to work together at different scales: 'think global, act local.' **Attempt to limit**- emphasis is on mitigation. Solutions include energy efficiency, conservation, biofuels, eco-cities, carbon capture & storage (CCS), nuclear and other alternatives – all aiming to lower greenhouse gas emissions. Only CCS seems to have potential to be a 'silver bullet.' **Greenhouse gas emissions** – nitrous oxide and methane may be discussed alongside CO2.

Level	Mark	Descriptor
Level 1	1-4	One or two generalised statements about how climate change can be stopped. Geographical terminology is rarely used. There are frequent written language errors.
Level 2	5-8	Some structure, suggests some range of solutions linked to lower greenhouse gas emissions; players mentioned in passing. Some geographical terminology is used. There are some written language errors.
Level 3	9-12	Structured account with a range of strategies / players and explanations of their role. Examples used have some details. Geographical terms to show understanding. Written language errors are minor.
Level 4	13-15	Well-structured account of a range of players and their role, with detailed examples. May take an evaluative view that recognises no single solution exists. Good real-world knowledge. Uses appropriate geographical terms and exemplification to show understanding. Written language errors are rare.

(Total 25 Marks)

Question Number		Indicative content
9 (a)		**Different groups** – individuals, societies, businesses, countries. **Need for green strategies (required actions)** – public opinion is still divided about whether green strategies are really required or not (the science is still contested). Some may reflect along the lines of 'if you act green for the rest of the year, is it OK not to be too green at Christmas?' - done well, this may be indicative of top band. People may of course appreciate the need for action but may still not act for a range of reasons (expect contemporary reference to post-Credit Crunch economic environment).

Level	Mark	Descriptor
Level 1	1-4	One or two ideas about fair / unfair world. May not know what 'ethical' really means. There are frequent written language errors.
Level 2	5-8	Some structure, with some ideas about how fair trade can help workers. Limited range and depth Some geographical terminology is used. There are some written language errors.
Level 3	9-12	Structured account which moves beyond fair trade and uses a range of examples to explain the role of ethical purchasing; some attempt to address ideas of an equitable world. Geographical terms to show understanding. Written language errors are minor.
Level 4	13-15	Well-structured account which explains a range ethical purchasing ideas and uses range of detailed examples; likely to question some approaches / idea of creating an equitable world. Uses appropriate geographical terms and exemplification to show understanding. Written language errors are rare.

Question Number		Indicative content
9 (b)		**More equitable world** – globalisation has winners and losers e.g. sweat-shop and agricultural workers. **Ethical purchasing** - fair trade and similar strategies give more to the 'have-nots', addressing some of the uneven development / lack of equity associated with what the Specification describes as a 'two-speed world'. **Play a part** - there are other ways of redistributing wealth e.g. political /trade reforms and international aid, all of which could be brought into the discussion at levels 3 & 4.

Level	Mark	Descriptor
Level 1	1-4	One or two generalised statements about the need to 'go green, limited reference to different groups. Geographical terminology is rarely used. There are frequent written language errors.
Level 2	5-7	Some structure and some reasons from different views; lacks range and may be unbalanced. At top end, begins to categorise different groups of people with differing attitudes and begins to use own knowledge. Some geographical terminology is used. There are some written language errors.
Level 3	8-10	Structured explanation of why a range of groups have differing views with details and examples. Appropriate geographical terms show understanding. Written language errors are minor.

(Total 25 Marks)

Question Number		Indicative content
10 (a)		**British families** – Figure 10 describes demographic and occupational shifts for family members, rising longevity as well as much greater variety in British citizens' roots. **Changes** – all kinds of changes can be <u>inferred</u>, including a shift towards greater affluence, higher levels of education, people being in receipt of better health and hospital care more varied ethnicity within families (and more young people of mixed ethnicity or race). Also credit answers that attempt to <u>explain</u> the changes seen.
Level	Mark	Descriptor
Level 1	1-4	A few changes described more or less verbatim from Figure 10. Geographical terminology is rarely used. There are frequent written language errors.
Level 2	5-7	Some structure - describes the main changes in an ordered way and introduces own ideas, inferences or explanation. Some geographical terminology is used. There are some written language errors.
Level 3	8-10	Structured examination of the family changes shown that provides a clear picture of changes since 1961 with plenty of extended inferences and / or explanation. Appropriate geographical terms show understanding. Written language errors are minor.

Question Number		Indicative content
10 (b)		**Greying population** – rise in percentage over-65 / rising mean age **Geographical challenges** – dependency, pensions, housing, NHS all need paying for through taxes levied on younger groups. More sophisticated answers may even tackle moral geographies of euthanasia, dementia and care. The word 'geographical' may steer the best answers towards a consideration of how these challenges play out at the local level (as population structure varies from place to place, so too does the degree of dependency e.g. Worthing). The best answers may view the over-65s as a heterogeneous category and contrast activity and dependency levels for over-80s and under-80s
Level	Mark	Descriptor
Level 1	1-4	Limited identification of one or two problems associated with looking after the old. Geographical terminology is rarely used. There are frequent written language errors.
Level 2	5-8	Some structure in an examination that focuses on problems or raising money from some people to pay for others. Some geographical terminology is used. There are some written language errors.
Level 3	9-12	Structured examination that includes a range of areas for concern. At the top end, may recognise the challenges are greater in some localities. Geographical terms to show understanding. Written language errors are minor.
Level 4	13-15	Well-structured account that sees a raft of measures needed to support the elderly, especially at the local level. May show awareness of political or moral dimensions of this issue. Uses appropriate geographical terms and exemplification to show understanding. Written language errors are rare.

(Total 25 Marks)

6GE02 Geographical Investigations Mark Scheme

Question Number	
1(a) QWC (i, ii, iii)	
Series	Indicative content
	Flooding is the inundation of land by water which is not normally submerged. GIS (Geographical Information systems) are software tools and digital maps that allow users to create interactive queries (user created searches), analyze spatial information, edit data, maps etc. It can help with assessing current and future scenarios. Increasingly GIS is being used for a number of key areas linked to flooding and flood impacts: • Management and risk analysis of land uses near / adjacent to flood prone areas. • Identification of people/groups and property at risk (from different magnitude flood events). • Potential risks of climate change, e.g. modelling increased rainfall (frequency and intensity). • Helping in decisions about flood management, e.g. cost benefit of hard vs soft solutions and where to locate defences). • Can help various agencies involved in supply of services (water, telecommunications, electricity, roads, hospitals etc) to understand potential risks and impacts linked directly to their own facilities and infrastructure. • Can help EA better plan flood warning systems, e.g. identifying populations at risk etc. A key element of the GIS system with regard to impacts is that various **layers** can be turned on you off to reveal who might be affected and the infrastructure etc. Some candidates to consider these layers which are indicated in the key. **Do NOT credit work which is coastal rather than river flooding.**
Level	**Mark**	**Descriptor**
Level 1	1-4	Limited structure and basic response using lift offs only. No real understanding of resource and its use. Considerable errors in language.
Level 2	5-7	Some use of stimulus to develop own ideas. Some focus on impacts linked to some understanding of resource/idea of layers. Some structure, and some written language errors. Some use of terminology.
Level 3	8-10	A clear response with effective use of resources linked to impacts, with a range of ideas. Expect understanding of GIS i.e. layers and ability to change for different uses. Well structured response. Written language errors are rare.

Question Number	
1(b) QWC (i, ii, iii)	

Series	Indicative content
	Basic assumption is that you would propbably need to complete a land use map and then obtain other data relating to flood risk.

Fieldwork (primary):	Basic land use map. Flooding evidence can come from qualitative sources, e.g. historic / eye witness accounts. Use of interviews / focus groups. Evidence of levels may be anecdotal, i.e. come from marks on walls, 'strand-lines' etc. Also could measure river discharge; bankfull measurements, infiltration etc. Also credit primary weather data collection.
Research (secondary):	Use of various sources to get a picture of flood extent, especially GIS EA maps; also flood risk maps for insurance companies; gauging station data. Historic newspaper cuttings / reports and other documentary evidence e.g. newscasts. The best responses will provide detailed evidence of specific sources, e.g. specialist weather websites etc, rather than 'the internet'.

Some candidates may refer to sampling strategies, i.e. land-use along a transect or by 'gridding' (this would give a more complete picture). Limited number of categories are required, e.g. types of residential, retail and open space etc.
The link between land use and flooding could be examined using overlays, or GIS. Also potential for statistical linking, e.g. Chi squared.

Level	Mark	Descriptor
Level 1	1-4	Very limited range of fieldwork / research described. Fieldwork may not be appropriate / linked to weather / flooding. Lacks structure. Considerable errors in language.
Level 2	5-8	Descriptive style but with some statements about either fieldwork or research approaches linked to flooding. May be a description that lacks focus on the question/less relevant techniques. Expect limited use of geographical terminology. There are some written language errors.
Level 3	9-12	Describes a range of fieldwork and/or research approaches linked to a flooding, but may lack balance. Some use of geographical terminology. Response shows some structure, limited written language errors. Maximum 10 if only fieldwork **or** research.
Level 4	13-15	Structured account which describes a balanced range of flood fieldwork (should mention 'risk') and research techniques in detail; shows good use of own / group fieldwork, with good use of terminology. Written language errors are rare.

Question Number	
1(c) QWC (i, ii, iii)	

Series	Indicative content
	Range of new technology ideas: • Better computer modelling to forecast / predict loactions, durations and likely impacts, e.g. GIFS Global Intercative Forecasting System which uses advanced grid computation technology. • Weather radar - rainfall density over a large area. Doppler radar allows accurate measurement of wind systems in severe storms. • Satellites can be used to estimate rain rate etc - help in the forecasting of floods. • GIS can be used to prepare mathematical models for extreme weather forecasting - it can process complex spatail information. Also accept other reasonable suggestions, e.g. drought monitoring – interpretation of satellite images. Flexible interpretation of the word 'new'. Technology is important, but there are issues where extreme weather can affect vulnerable communities and there is not the technical capability locally to implement new strategies. Costs of technology and staff expertise (training/support) may be issues in some parts of the world. May also be issues with standardisation of information/data across agencies and countries. Credit any exemplification and case study material.

Level	Mark	Descriptor
Level 1	1-4	Basic and generalised with general ideas on forecasting and/or management. No comment regarding value. Lacks structure and very limited use of geographical terminology. Considerable errors in language.
Level 2	5-7	Some ideas examined, refers to technology/methods of forecasting and/or management; implied value. Likely to in be restricted either in range and or depth. Some structure and some written language errors.
Level 3	8-10	A response which refers to new technology and covers **both** forecasting and management. For top of band expect some discussion of value, possibly linked to an example. Well structured and balanced response. Written language errors are rare.

(Total 35 Marks)

Question Number	Question
2(a) QWC (i, ii, iii)	
Series	Indicative content
	GIS (Geographical Information systems) are software tools that allow users to create interactive queries (user created searches), analyze spatial information, edit data, maps etc. In its strictest sense GIS data is underpinned by a database of values (array) which gives a spatial identity and value to points on a map. Can help with assessing current and future scenarios. Increasingly GIS is being used for a number of key areas linked to coastal management and strategies: • Management and risk analysis of land uses near / adjacent to areas at risk of coastal inundation. • Identification of people (groups?) and property at risk (from different future shoreline retreat scenarios). • Potential risks of climate change, e.g. modelling changes in coastal erosion due to sea level rise. • Helping in decisions about coastal protection, e.g. cost benefit of different solutions (rip rap, gabions, groynes etc) and where to locate defences / implement sustainable strategies. • Can help various agencies involved in supply of services (water, telecommunications, electricity, roads, hospitals etc) to understand potential risks and impacts linked directly to their own facilities and infrastructure. Bacton gas facility is especially important in this respect (hence 'hold the line'). • Can help local authority better plan infrastructure , new housing etc. • At coast GIS particularly important for mapping coastal wildlife / biodiversity. Can see impacts of various management options on shoreline and biodiversity. • Also credit knowledge of the four types of coastal management strategies. A key element of the GIS system with regard to impacts is that various **layers** can be turned on you off to reveal who might be affected and the infrastructure etc. Expect candidates to consider these layers which are indicated in the key.

Level	Mark	Descriptor
Level 1	1-4	Basic response only with very limited range/depth of detail. May be basic lift-offs from figures only. No real understanding of resource and its use. Considerable errors in language.
Level 2	5-7	Uses figures as a stimulus to develop own ideas. Some focus on management and some understanding of resource. Some structure, and some written language errors. Some use of terminology.
Level 3	8-10	A clear response with effective use of resources linked to different types of management. Expect understanding of GIS i.e. layers and ability to change for different uses. Well structured and balanced response. Written language errors are rare.

Question Number	Question
2(b) QWC (i, ii, iii)	

Series	Indicative content
	There are a range of fieldwork and research opportunities – expect these to include:

Fieldwork (primary):	Measurement / evaluation of existing defences, e.g. use of field sketch, video, digital pictures, use of bi-polar sheet; speaking to residents and visitors (questionnaires / structured interviews / oral histories). Use of video or transcripts to record findings (could be group approach). Rates of coastal retreat can be sometimes calculated in the field from know reference points. Some candidates may have also done cliff erosion / stability surveys.
Research (secondary):	Historic maps to illustrate change in position of coast / coastal features, e.g. www.old-maps.co.uk; also local newspapers, blogs/forums etc. Old photographs and post cards may be a useful source (again could be internet sourced). Possible use of GIS / electronic maps to illustrate changes.

Provide credit for possible reference to sampling strategies, e.g. systematic and stratified, no of people interviewed etc; also some candidates may have used a pilot survey, e.g. to format questionnaires.

In reality difficult to measure effectiveness – credit any acknowledgment that results may be partial and tentative; based on more subjective observations. Evidence needs to come from a variety of sources to build up a more complete picture.

N.B. Candidates who outline fieldwork an research to investigate increased risk of coastal erosion and flooding with <u>no reference</u> to coastal management schemes can access at most the top of level 3.

Level	Mark	Descriptor
Level 1	1-4	Very limited range of fieldwork/research described. Fieldwork may not be appropriate/linked to coastal management schemes. Lacks structure. Considerable errors in language.
Level 2	5-8	Descriptive style but with some statements about either fieldwork or research approaches linked to a coastal management schemes. May be a description that lacks focus on the question/less relevant techniques. Expect limited use of geographical terminology. There are some written language errors.
Level 3	9-12	Describes a range of fieldwork and/or research approaches linked to coastal management schemes, begins to examine effectiveness/implies effectiveness. Some use of geographical terminology. Response shows some structure, limited written language errors. Max 10 if only fieldwork **or** research.
Level 4	13-15	Structured account which describes a range of fieldwork and research techniques in detail and examines the effectiveness of management schemes; shows good use of own / group fieldwork information, with good use of terminology. Written language errors are rare.

22

Question Number	
2(c) QWC (i, ii, iii)	
Series	Indicative content
	Sustainable coastal defence/management attempts to accommodate, copy or work alongside natural systems and processes, with ecosystems often playing a key role. Typically such approaches are small scale, localised and bottom-up or community driven. They have the **advantages** of being environmentally friendly, sometimes cheaper and longer-lasting. Consideration needs to be taken so that schemes are compatible with adjacent coastal areas. Integrated coastal management may include sustainable/soft options as well as hard defences. Large coastal cells are broken down into smaller units and then action is taken via SMP (Shoreline Management Plans). Numerous players/organisations are involved in SMPs – can be difficult to coordinate and manage. Managed retreat is where the sea is allowed to flood parts of the inter-tidal zone – thus creating mudflats and valuable salt marsh habitat. Coastal realignment may be more controversial since it involves 'retreating the line', e.g. Kent, N. Norfolk and Essex. Is often viewed by local residents as the do-nothing and easy opt out. Politically can be difficult to execute. Credit any exemplification and case study material – schemes or locations.

Level	Mark	Descriptor
Level 1	1-4	Basic and generalised with a few ideas on coastal management. No appreciation of sustainable/integrated. Lacks structure and very limited use of geographical terminology. Considerable errors in language.
Level 2	5-7	Some ideas, implied understanding of sustainable and/or integrated approaches. Likely to be restricted either in range and or depth. Some structure and some written language errors.
Level 3	8-10	A response which examines sustainable and/or integrated approaches; deals with value. Reward exemplification either schemes or locations. Well structured response. Written language errors are rare.

(Total 35 Marks)

Question Number	
3(a) QWC (i, ii, iii)	
Series	Indicative content

	Some general patterns in inequality between urban and rural-
	    • Considerable different between urban and rural areas in terms of number of services.
	    • **But**, rural areas have more than 50% of petrol stations and post office.
	    • Rural areas <5% of jobcentres, about 10% of free cash points and only ~15% banks and building societies.
	
	Arguably bigger inequalities between sparse, less-sparse and total rural:
	    • E.g. sparse hamlets only have 2 of the 1519 banks and building societies in rural areas.
	    • E.g. 9 out of 1253 of bigger GP surgeries.
	    • BUT not an even picture, has a greater share of post offices and free cash points.
	
	Therefore the data suggests considerable inequality in terms of numbers of services. Lots of points can be made, especially credit students who use data in a more sophisticated manner, e.g. calculate percentages or put places into rank order etc.
	
	No credit for any explanation or suggestions of limitations in the way in which the data was measured.

Level	Mark	Descriptor
Level 1	1-4	One or two basic items of data described, i.e. simple lift offs. Lacks structure and considerable errors in language.
Level 2	5-7	A range of descriptive comments related to the data, but may not link to inequality. Some breadth or depth. Some structure and uses data to support ideas. There are some written language errors.
Level 3	8-10	A detailed response with effective use of resource to illustrate inequality. Well structured good use of data from table. Written language errors are rare.

Question Number	
3(b) QWC (i, ii, iii)	
Series	**Indicative content**
	There are a range of fieldwork and research opportunities –these may include:

Fieldwork (primary):	Accessibility audit of the urban environments, focusing on key groups, i.e. wheelchair users (using photos to support and describe), location of 'dial a ride', zones of exclusion etc. Could culminate in a local town accessibility map. Maps which examine the geography of access in terms of public transport, parking etc. Questionnaires / interviews / oral histories – how and why groups of people are excluded or feel inequality. EQ surveys may also feature. May also be surveys of crime, graffiti or 24hr city ideas, e.g. land-use maps linked to exclusion.
Research (secondary):	Use of internet blogs, forums etc to find the 'hidden' or excluded, e.g. skateboarders (who frequently do not have a voice). Research access to employment, education, higher-order shopping. Creation of personal/group isochrone maps, e.g. for access to services. Researching 'geo-demographic' data, e.g. neighbourhood profiles, census etc.

Provide credit for possible reference to sampling strategies, e.g. systematic and stratified, no of people interviewed etc; also some candidates may have used a pilot survey, e.g. to format questionnaires.

Note – if not URBAN then rubric. Allow flexible interpretation of 'urban'. Unnamed general descriptions of urban places will tend to be self penalising.

Level	Mark	Descriptor
Level 1	1-4	Very limited range of fieldwork/research described. Fieldwork may not be appropriate/linked to inequality. Lacks structure. Considerable errors in language.
Level 2	5-8	Descriptive style but with some statements about either fieldwork or research approaches linked to a general study of inequality. May be a description that lacks focus on the question/less relevant techniques. Expect limited use of geographical terminology. There are some written language errors.
Level 3	9-12	Describes a range of fieldwork and/or research approaches linked to the study of the pattern of inequality, but may lack balance. Some use of geographical terminology. Response shows some structure, limited written language errors. Maximum 10 if only fieldwork **or** research.
Level 4	13-15	Structured account which describes a balanced range of patterns of inequality fieldwork and research techniques in detail; shows good use of own / group fieldwork information, with good use of terminology. Written language errors are rare.

25

Question Number	
3(c) QWC (i, ii, iii)	
Series	Indicative content
	Sustainable solutions make take may forms: economic, socio / cultural and environmental. Expect focus on local and community based activities, bottom-up and requiring low start-up / running / implementation costs. Candidates may also refer to Objective 2b funding etc as a pump-primer in rural areas. Also expect a MEDC / UK focused response, but equally credit LEDC ideas. Examples of sustainable solutions in different contexts:

MEDC	• Provision of (affordable) rural housing through a Rural Housing Enabler. • Community transport links, e.g. dial-a-bus and Medi-bus. • Key Services Centres to provide essential services for smaller settlements in the hinterland; also combined services, e.g. post-office in the pub etc. • Encouraging employment opportunities, e.g. promotion of farmers markets/selling of local produce/viticulture and other diversification strategies. • Community radio. • Art etc festivals to bring people together and create business/trade opportunities. • Renewable fuels businesses and energy schemes.
LEDC	• Use of local people as capacity builders to ensure projects continue when NGO leaves. • Electrification of areas and providing new infrastructure. • Promote farm related health, education projects and health posts in rural villages. • Use of appropriate/intermediate technology for farmers • Eco-friendly/environmental approach (dairy goats an issue) to prevent land degradation.

Key idea is 'examine success', so expect discussion of how well particular schemes have or haven't worked.

Note – more than one scheme in one place acceptable.
Note – if not RURAL then rubric. Allow flexible interpretation of 'rural'.

Level	Mark	Descriptor
Level 1	1-4	Vague in both detail and depth. Very limited appreciation of sustainable solutions. Lacks structure and very limited use of geographical terminology. Limited or no reference to an example. Considerable errors in language.
Level 2	5-7	Uses at least one example to support response. Moves towards understanding of sustainability. Some structure. Likely to be lacking in either range or depth, but shows general understanding of principle. There are some written language errors.
Level 3	8-10	A clear response which shows understanding of sustainable solutions, linked to reducing rural inequality. Well structured and balanced response which uses example(s) effectively (at least one in depth). Written language errors are rare.

(Total 35 Marks)

Question Number	
4(a) QWC (i, ii, iii)	

Series	Indicative content
	Data gives mixed views about the 'health' of Wem – in summary

Shop unit data (as annotation on pictures)	Large no of unused shop units compared to total available; lots of vacant floor-space (35%); 11% vacancy in terms of shops units.
Fact file	Limited number of high order/comparison goods, but NOT cloned. 'Quaint' nature may discourage certain businesses / economic activity.
Local residents	Range of comments, on balance more negative compared to positive (5:3) - related to services, shut shops, and image.
Photos	Photos show more of a mixed picture: top image - food retail outlets - night-time economy, but shut during day = problem. Bottom image - higher diversity of local shops. Specialists. Road closed picture may signal problems or improvements and could be taken either way. Lack of pedestrians and cars may signal problems, i.e. limited customers for businesses.

On balance, data *does* suggest Wem needs re-branding, but not all doom and gloom.

Level	Mark	Descriptor
Level 1	1-4	One or two basic lift-offs. Lacks structure and very limited use of geographical terminology. Considerable errors in language.
Level 2	5-7	Some range of evidence which is commented on linked to the need to re-brand, but lacks either breadth or depth. Some structure and uses data to support ideas. There are some written language errors.
Level 3	8-10	A clear response with effective use of evidence linked to the need to re-brand. Expect use of data to support ideas. Well structured good use of geographical terminology. Written language errors are rare.

Question Number	
4(b) QWC (i, ii, iii)	

Series	Indicative content
	There are a range of fieldwork and research opportunities – expect these to include some of the following:

Fieldwork (primary):	Visit location(s), collect qualitative and quantitative evidence, e.g. oral histories of change, perception of reputation, looking for evidence of change in functional hierarchy etc. Looking for evidence of improvements to 'place image', 'product' image and imaging urban people. Opportunity at busy rural or urban re-branded locations to determine sphere of influence etc (use of questionnaire?). Lots of photographic and video evidence expected, e.g. architectural icons / design features. Especially important as part of urban branding process.
Research (secondary):	Photos/postcards illustrating change, changes in employment, visitor profile and published catchment survey data etc. Urban areas e.g. crime statistics, visitor numbers/footfall patterns. Data from town/city centre management. Also use of geo-demographic data e.g. postcode checkers on the internet etc.

Provide credit for possible reference to sampling strategies, e.g. systematic and stratified, no of people interviewed etc; also some candidates may have used a pilot survey, e.g. to format questionnaires.
In reality its is quite difficult to measure evidence – credit any acknowledgment that results may be partial and tentative; based on more subjective observations.

Note – if not URBAN then rubric. Allow flexible interpretation of 'urban'.

Level	Mark	Descriptor
Level 1	1-4	Very limited range of fieldwork/research described. Fieldwork may not be appropriate/linked to evidence of re-branding. Lacks structure. Considerable errors in language.
Level 2	5-8	Descriptive style but with some statements about either fieldwork or research approaches linked to a re-branding study. May be a description that lacks focus on the question / less relevant techniques. Expect limited use of geographical terminology. There are some written language errors.
Level 3	9-12	Describes a range of fieldwork and/or research approaches linked to the study of evidence of re-branding, but may lack balance. Some use of geographical terminology. Response shows some structure, limited written language errors. Maximum 10 marks if only fieldwork **or** research.
Level 4	13-15	Structured account which describes a balanced range of re-branding fieldwork and research techniques in detail; shows good use of own / group fieldwork information, with good use of terminology. Must link to 'evidence'. Written language errors are rare.

Question Number	
4(c) QWC (i, ii, iii)	

Series	Indicative content
	Success can be indicated by: • Economic data, e.g. numbers of new businesses, use retail space vs vacant space, visitor numbers and tourists, footfall counts, rateable values. Number of renovations • Evidence of new high profile developments, e.g. farm diversification / post-production schemes. Comparing new agri-environmental schemes to old intensively farmed landscape. • Giving the place a new 'image', e.g. linked to a TV series such as Holmfirth – Last of the Summer Wine country. Piggy-backing culture, food and art, e.g. through restaurants, festivals, food weeks etc. • Examining who has benefited from changes – positive and negative impacts of neighbourhoods and communities. Blogs and forums may provide evidence for this. The focus could be social, economic or environmental. To really look at success recent re-branding efforts might be compared to baseline data <u>before re-branding</u> to see change. Note – more than one scheme in one place is acceptable. Note – must be RURAL if not rubric. Allow flexible interpretation of rural.

Level	Mark	Descriptor
Level 1	1-4	Identifies one or two basic ideas only. Vague or no reference to a specific place. Little structure and very limited use of geographical terminology. Considerable errors in language.
Level 2	5-7	Describes some rural re-branding and moves towards commenting on success. Uses an example to support response. Some structure. There are some written language errors.
Level 3	8-10	A structured account which examines success of schemes. Well structured response which uses examples effectively. Written language errors are rare.

(Total 35 Marks)