GCE MARKING SCHEME

GEOGRAPHY
AS/Advanced

JANUARY 2013

INTRODUCTION

The marking schemes which follow were those used by WJEC for the January 2013 examination in GCE GEOGRAPHY. They were finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conferences were held shortly after the papers were taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conferences was to ensure that the marking schemes were interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conferences, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about these marking schemes.

GEOGRAPHY

The Assessment of Quality of Written Communication at AS

Opportunities for assessment of quality of written communication are found within each of the Assessment Objectives and thus within all questions that demand continuous prose that are marked out of ten.

For each of the ten mark questions in G1 and G2, the following criteria for quality of written communication should be applied to the levels of assessment.

Mark Band Criteria for the Assessment of Quality of Written Communication for 10 mark questions at AS.

Level 3	• Information is organised clearly and coherently and arguments are logically developed and tightly structured. • Candidate writes in continuous prose using relevant and accurate geographical vocabulary. • There are relatively few errors of spelling, punctuation and grammar.
Level 2	• Information is relatively clear but points and arguments are not always direct or logically developed. • The use of geographical vocabulary is variable and prose style may lack precision or accuracy. • There are some errors of spelling, punctuation and grammar that may make the meaning unclear.
Level 1	• Information is randomly organised and lacks clarity. • Statements are brief and bald and the language is simplistic with limited use of geographical vocabulary. • Spelling, punctuation and grammar are weak with errors that may be intrusive.

Assessment Objectives Grid for GCE Geography - G1

January 2013

	Knowledge and Understanding	Application	Skills	Total	Key Question
Question 1					
(a)	**0**	**2**	**3**	**5**	**1.4**
(b)	**8**	**2**		**10**	**1.3**
(c)	**7**	**3**		**10**	**1.4**
	15	**7**	**3**	**25**	
Question 2					
(a)	**0**	**2**	**3**	**5**	**2.2**
(b)	**8**	**2**		**10**	**2.1**
(c)	**7**	**3**		**10**	**2.2**
	15	**7**	**3**	**25**	
Question 3					
(a)	**1**	**1**	**5**	**7**	**1.4**
(b)	**2**	**1**	**5**	**8**	
(c)	**3**	**2**	**5**	**10**	
	6	**4**	**15**	**25**	

Using the mark bands

The aim is to find the descriptor that conveys most accurately the level attained by the candidate, using the best-fit model. A best-fit approach means that marks should be awarded for a response that most fairly matches different aspects of the descriptor.

GCE GEOGRAPHY G1

MARK SCHEME - JANUARY 2013

Q.1 (a) Use *Figure 1* to describe the impacts of climate change in Tajikistan. [5]

Candidates may refer to a variety of potential impacts that link the two elements of the resource.

First part of Figure 1 states that temperature increase has led to increased sickness in crops and thus a loss of up to 30% due to disease. It also points out that drought has been hard on the wheat crop. Allow maximum 2 marks for comments from this element.

Second part of Figure 1 invites the candidate to make links between a decline in agriculture and a variety of economic and social characteristics. For example:

- [as the country relies on agriculture] [this would reduce employment] 2 marks
- [the decline in agriculture] [would also decrease the wealth of the country] 2 marks – [GDP / tax revenue] 1 mark
- [the decline in agriculture] [may also decrease trade as it is a high proportion of exports] 2 marks
- [there is also an unequal gender impact] [as most women are engaged in agriculture] 2 marks.

No double marking.

Allow one mark for a comment with an extra mark for information/data from resource to back up comment. All 5 marks may come from linkage.

(b) Describe and explain how *one or more* changes to the physical environment provide evidence for climate change. [10]

The question has a focus on the changes to the physical environment and requires **both** a description and explanation. The candidates may refer to changes that have taken place to atmosphere, hydrosphere or biosphere. Possible changes could refer to:

- changing temperatures of the atmosphere
- increase in extreme weather events
- changing distribution of climatic belts
- changing sea levels
- changing salinity of the sea
- changing acidity of the sea
- changing ecosystems
- glacial retreat/advances
- permafrost changes
- changing gas composition of the atmosphere.

Allow reference to both long and short term climate change e.g. El Nino.

The ideal answer should give a description of the changes that are selected and why they occur with reference to evidence for climate change. Candidates may select from a variety of temporal scales – long or short term climatic changes.

No credit for human evidence of climate change.

Level 3 8-10 marks	Detailed and developed knowledge and understanding of changes to physical environment. Developed explanation of the changes to physical environment. Good development of examples.
Level 2 4-7 marks	**Either**, some knowledge and understanding of changes to physical environment or one change in more detail. Some explanation of changes to physical environment. **Or**, only addresses one part of the question. Examples are evident.
Level 1 0-3 marks	Basic knowledge of changes to physical environment. Description or basic explanation of changes to physical environment. Little use of examples.

(c) Outline the impacts of extreme weather on human activities. [10]

Candidates may examine one or more extreme weather conditions in response to this question. They may include a variety of extreme weather events that have been attributed to climate change such as hurricanes, exceptional rainfall events that lead to flooding, heat waves and short-term drought. One expected element of the answers will be a description of the extreme weather event(s) with some exemplar material as an illustration. The depth of detail will vary according to the number of types of extreme weather selected. The main focus is however on the impact on human activities and this can include a number of characteristics:

- impacts on economic activity – manufacturing, tourism, agriculture etc.
- impacts on finance – insurance, repair, aid, compensation etc.
- impacts on demographics – migration, population distribution
- impacts on society – health, trauma, break up of community etc.
- impacts on management – increased activity focused on preparation etc.

The actual content of the answer will depend upon the extreme weather event(s), the activity and the location selected.

There may be a number of approaches:

- focus on one or more events
- focus on location e.g. Gulf of Mexico
- focus on activities with reference to a variety of weather events.

All approaches are valid.

Level 3 8-10 marks	Developed knowledge and/or understanding of extreme weather. Developed explanation of how extreme weather impacts on human activity. Good development of example(s).
Level 2 4-7 marks	Some knowledge and/or understanding of extreme weather. Some explanation of how extreme weather impacts on human activity. Example(s) are evident.
Level 1 0-3 marks	Basic knowledge of extreme weather. Description or basic explanation of how extreme weather impacts on human activity. Little use of example(s).

Q.2 (a) Use *Figure 2* to compare sources of household income before and after the earthquake. [5]

There are a number of general comparisons that can be made that show the pattern of income sources before and after the earthquake:

- unemployment is the only one to increase / all decrease except unemployment
- street vendors has the biggest decline
- remittances show the least decline
- salaried jobs now the third highest
- street vendors now the second highest.

These are the most obvious but accept other valid generalisations. Accept comparisons of trends/patterns at 1 mark plus development/use of data.

Allow comparison of individual sources of income before and after the earthquake. 1 mark for comparative comment e.g. decrease/increase and 1 mark for use of data, comparison of percentage figures or percentage change.

(b) Outline the processes operating at destructive plate margins. [10]

Candidates should focus on the processes that operate at destructive margins. However, some may drift into the resulting land forms to illustrate the response which is acceptable. Answers **may** refer to:

- internal processes that result in plate movement
- directions of plate movement – towards each other
- subduction of one of the plates
- two types of destructive margin ocean to continental and ocean to ocean – allow collision margins
- the processes that lead to the formation of volcanoes
- the production of earthquake activity.

Allow reference to the external processes at such margins that are the result of tectonic activity – liquefaction, volcanic processes, tsunamis.

Candidates may approach this from a generic view i.e. types of destructive margin or with reference to a specific boundary/location. Either approach is acceptable.

Accept answers that are solely annotated diagrams.

Level 3 8-10 marks	Detailed and developed knowledge and understanding of processes. Good use of examples.
Level 2 4-7 marks	Some knowledge and understanding of processes. Examples are evident.
Level 1 0-3 marks	Basic knowledge of processes. Little use of examples.

(c) Outline the demographic and social impacts of *one or more* tectonic events. [10]

The content of answers will vary considerably with the selection of volcanic and/or earthquake event(s) and the examples used to illustrate the response. Expect a variety of generic ideas to form the basis of responses – some may look at long- and short-term impacts, some may examine impacts as they refer to one event, some may see impacts as local, regional or global.

Reference may be made to a number of impacts:

- level of mortality
- migration/displacement
- disease/injury
- disruption to normal life
- loss of housing
- damage to infrastructure – water, gas, electricity
- disruption of transport and communication
- breakdown of social order
- impacts on emergency services
- stress and trauma to population affected by tectonic event
- impacts on cultural heritage.

Be prepared to credit other valid social/demographic impacts and trade depth versus breadth.

Allow an event by event approach.

Level 3 8-10 marks	Detailed and developed knowledge. Developed understanding of how tectonic activity has demographic and social impacts. Good development of examples.
Level 2 4-7 marks	**Either**, some knowledge and understanding of how tectonic activity has demographic and social impacts. **Or**, developed understanding of how tectonic activity has either demographic **or** social impacts – is unbalanced. Examples are evident and enhance the explanation.
Level 1 0-3 marks	Basic knowledge of how tectonic activity has demographic and social impacts. Little use of examples.

Q.3 (a) Use *Figure 3* to outline the consequences of flooding on St Jean-sur-Richelieu. [7]

There are a number of consequences that can be seen on the photographs:

- fields have been flooded which will impact on agricultural production
- houses have been flooded which will result in homelessness, damage to property, insurance claims, possible trauma
- transport networks have been blocked
- possible need for rescue with boats seen next to houses.

Candidates need to identify consequences from the photographs and develop how they impact on St Jean-sur-Richelieu.

Level 3 6-7 marks	Shows clear and detailed identification and description of **consequences**. Extensive use of information from resource.
Level 2 3-5 marks	Shows some ability to identify and describe consequences. Good description of the flooding.
Level 1 0-2 marks	Basic description of flooding.

(b) Describe *one or more* methods that could be used to gain information on the causes of a flood. [8]

Candidates may approach this from a variety of directions. Some will look at one method in great detail whilst others may review a number of methods. Whichever route is taken there should be two elements to the method(s) selected – a description of the method itself and how it can be used to gain information on the causes of the flood.

Methods selected will vary but may include:

- land-use analysis – map evidence or primary data collection
- collection of information concerning the water content of the soil
- geological data
- comparison of ordnance survey maps – spatial and temporal
- analysis of meteorological information
- slope analysis
- flood hydrographs, which show the link between rainfall and discharge.

Other valid methods should be given full credit.

Allow approaches that focus on methods of data collection but these methods of data collection must refer to causes of flooding.

Level 3 6-8 marks	Good and realistic knowledge and understanding of method(s). Developed ability to outline link to causes of a flood/flooding.
Level 2 3-5 marks	Some realistic knowledge and understanding of method(s) **or** one method in more detail. Some ability to outline link to causes of a flood/flooding.
Level 1 0-2 marks	Basic knowledge of method(s). Basic ability to outline link to causes of flood.

(c) Discuss *two* limitations of your own investigation into a changing physical environment. [10]

You should clearly state the question that you have investigated

The content of the responses will depend on the topic selected for investigation and the focus on the location of limitations within the enquiry approach. The discussion element of the question invites the candidates to address why the selected content is limiting to the study. Answers may review limitations in:

- the planning of the study and could look at elements such as the construction of the data-collection sheet, the type of data to be collected, the equipment to be used or the lack of a pilot survey;
- the data-collection element may look to the sampling method, the number of samples and the actual collection of data;
- the data presentation may look at the appropriateness of the graphs, maps etc or the ability to construct them with the data collected;
- data analysis may examine the use of statistics and refer to the number of samples;
- conclusions may refer to the how the whole data collection/analysis sequence failed to give any pattern etc.

Level 3 8-10 marks	Developed knowledge and understanding of two limitations and how the limitations reduce the effectiveness of the investigation. Good development in the context of the study.
Level 2 4-7 marks	**Either,** some knowledge of two limitations; some understanding of how the limitations reduce the effectiveness of the investigation; some development in the context of the study. **Or**, developed detailed knowledge and understanding of **one** limitation; some development in the context of the study.
Level 1 0-3 marks	Basic knowledge of two limitations. Basic development in the context of the study.

Geography - G2

	Knowledge and Understanding	Application	Skills	Total	Key Question
Question 1					
(a)		**2**	**3**	**5**	**1.1**
(b)	**8**	**2**		**10**	**1.2**
(c)	**7**	**3**		**10**	**1.6**
	15	**7**	**3**	**25**	
Question 2					
(a)		**2**	**3**	**5**	**2.2**
(b)	**8**	**2**		**10**	**2.2**
(c)	**7**	**3**		**10**	**2.2**
	15	**7**	**3**	**25**	
Question 3					
(a)			**7**	**7**	
(b)	**4**	**4**		**8**	
(c)	**2**		**8**	**10**	
	6	**4**	**15**	**25**	
	36 **(48%)**	**18** **(24%)**	**21** **(28%)**		

Using the mark bands

The aim is to find the descriptor that conveys most accurately the level attained by the candidate, using the best-fit model. A best-fit approach means that marks should be awarded for a response that most fairly matches different aspects of the descriptor.

GCE GEOGRAPHY G2

MARK SCHEME - JANUARY 2013

Q.1 (a) Use information from *Figure 1* to describe changes in world population. **[5]**

Suggested changes

In summary there are **four** phases of growth with **three** main changes between them:

- Phase 1: limited growth, a stable population – world population was mainly **stable**, but with **very slow** growth from the beginning of human history (over 5000 years) to 1800.
- Phase 2: exponential growth – world population then grew **exponentially** (at an ever increasing rate) taking less and less time to add extra billions. It took over **5000 thousand years** to 1800, for the world to reach 1 billion people. The second and third billion, however, took **shorter times** of 130 and 30 years respectively.
- Phase 3: steady growth – from the fourth billion onwards world population has continued to grow, but at a **much steadier rate** than previously. The latest billion to be added in 2011 only took 12 years, and this was the same time as the previous billion took.
- Phase 4: declining growth – into the future, the length of time to add a billion is set to increase from 12 to 13 years showing a **slowing down** of the growth of world population.

Allow one mark for a comment about population change with an extra mark for information from the resource to support that comment, up to the maximum of 5 marks. Award max 3 for direct lift of information from Figure 1. Allow other valid approaches.

(b) Explain why birth rates differ in Stages 2 and 4 of the demographic transition. **[10]**

There is likely to be confusion between stages, particularly as populations change rather rapidly and statistics constantly go out of date. So below are the major birth-rate characteristics for all stages. Correct reasons may be given, but any exemplar country provided may be inaccurate today. For example a candidate may give reasons for a stage 2 country, but provide a stage 3 example. Similarly, some stage 4 information may be provided, but the country quoted is currently in stage 5, but used to be in stage 4. As long as the reasons and supporting figures are correct a named country may be incorrect today, but this would not preclude a mark in Level 3.

Birth rate: the annual number of births per 1,000 total population.

Some responses may include statistics such as these below to illustrate their case studies and should be credited.

Stage 2: e.g. Niger 48; Chad 45.
Stage 3: Mexico 19; Argentina 19.
Stage 4: UK 13; Canada 11.
Stage 5: Germany 8; Japan 8; Italy 9.

For information:

- the average worldwide birth rate is 20
- the average for developed countries is 11
- the average for developing countries is 22
- the average for developing countries, excluding China, is 25
- the average for the least developed countries is 35.

Reasons for a relatively high BR in stage 2:

- Children needed to help on the farm.
- Children needed as a pension.
- Children needed as a health-care service.
- More children needed to replace those who die young (high infant mortality e.g. Mali 116).
- Contraception not widely available.
- Contraception not culturally accepted.
- Lack of education regarding family planning (high school fees).

Stage 3 countries would have lower BRs because of the following developments which begin in stage 2:

- Establishment of medical centres with health checks and vaccinations against malaria and diarrhoea reducing infant mortality.
- Contraceptive advice available at health centres.
- Education is more affordable with fewer children in the family.

For example, the total population of India is 1.25 billion with a BR of 23, in Kerala the BR is 14, and fertility has dropped from 7 to 3 due to:

- Sterilisation of women.
- Health care.
- Contraceptive advice:
- Education on family planning.
- High (90%) literacy rate amongst women.
- Education gives women confidence to take control of their own live.
- Economic changes bring stability to society such as a minimum wage, owning property, the establishment of trade unions to argue for workers' rights.

Stage 4 and 5 countries have low BRs; some factors encouraging this include the following:

- The baby boomers (1946-1954) have just reached pension age: by 2021 20% of the population of the UK will be pensioners. Pensioners tend not to have many babies.
- Infant mortality is low, (e.g. UK 4.5), so very little need to replace those who die young.
- The introduction of the pill and other efficient contraceptives since the 1960s has enabled choices about babies to be made.
- Many women have chosen to follow a career, delay marriage and delay a family so giving less time to produce many babies.
- People can choose a more materialistic lifestyle instead of having babies.

Some stage 5 countries have low, but increasing, BRs in stage 5; e.g. UK and France, now 13, was lower. This is due to:

- In-migration of the baby-producing age ranges.
- Government incentives to produce babies to counteract an ageing population (e.g. extending both maternity and paternity leave, maternity grants, child allowance, family tax credit, child trust fund).

(Figures from www.prb.org data sheet 2011.)

Level 3 8-10 marks	Developed knowledge and detailed understanding of why birth rates differ in stages 2 and 4 of the demographic transition. Good balance between the stages. Examples are evident and enhance the explanation.
Level 2 4-7 marks	Some knowledge and understanding of why birth rates differ in stages 2 and 4 of the demographic transition. Some imbalance between the stages. Some use of examples.
Level 1 0-3 marks	Basic knowledge of differing birth rates in stages 2 and 4 of the demographic transition. Only one stage attempted. Little use of examples.

(c) Outline the challenges faced by countries in Stage 5 of the demographic transition. [10]

Challenges may be:
- demographic
- economic
- social/political
- environmental

Suggested challenges:
- Birth rates may be falling; steady or increasing dependent upon the example chosen and governments may select to tackle the relevant issue.
- Not enough young workers to pay taxes to look after the old.
- The economy will stagnate with not enough vigorous, innovative, willing young workers.
- Industries catering for the youth market will decline.
- Immigration of different ethnic groups may cause social tension.
- The cost of health services becomes unsustainably high.
- Providing sufficient housing for a more 'diffuse' population and social structure becomes problematical.
- Death rates are increasing: UK [9], Germany [10], Italy [10], and Japan [9]. Eastern European countries in particular have relatively high death rates such as Ukraine [15], Russia [14], Bulgaria [15].

Candidates may consider solutions to challenges which are themselves challenges:
- Government incentives to encourage births (e.g. Child Trust Fund).
- Encourage immigration.
- Increase industrial productivity.
- Raise the retirement age.
- Increase taxes to pay for pensions and health care of the old.
- Change planning legislation to make it easier to build houses.
- Increase health education providing advice on healthy lifestyle choices regarding smoking, drinking, safe sex, eating and exercise.

(All figures derived from www.prb.org data sheet 2011.)

Level 3 8-10 marks	Developed knowledge and detailed understanding of the challenges faced by country(ies) in Stage 5 of the demographic transition. Good development of example(s).
Level 2 4-7 marks	Some knowledge and understanding of the challenges faced by country(ies) in Stage 5 of the demographic transition. Some use of example(s).
Level 1 0-3 marks	Basic knowledge of the challenges faced by country(ies) in Stage 5 of the demographic transition. Little use of example(s).

Q.2 (a) Describe the differences between the two types of residential area shown in *Figures 2a* and *2b*. [5]

Possible differences could include:

	Figure 2a	Figure 2b
1	Terraced housing.	Two semi-detached houses.
2	Brick work is exposed, not rendered.	Walls are rendered and painted white.
3	No gardens.	Well kept gardens.
4	Windows are in different styles, but all look to be replacement windows.	Windows are possibly replacement, but leaded.
5	No garages, cars parked on the road.	Single garages.
6	Entrance doors can be seen, opening onto the street.	Doors are not visible, perhaps on the side of the houses.
7	Not uniform in appearance: windows and doors are different with one house having a newer, sandy coloured, façade.	The two houses are very uniform in appearance, but the gardens are different and the garage doors are a different colour.
8	High housing density.	Lower housing density.
9	Probably in an inner city.	Suburban.
10	Normally rented.	Normally privately owned.
11	Possibly students.	Probably family or elderly.
12	Lower environmental quality.	Higher environmental quality.

Award 1 mark for one paired difference up to a maximum of 5.

Those that simply list the characteristics of the two areas are likely to be self-penalising, as the differences between them are not given, so should not be awarded more than 3 marks. Credit should not be given for similarities.

(b) Explain why different social and cultural areas develop within urban settlements. [10]

For a variety of reasons people like to live in environments with similar types of people to themselves. Often migration occurs as people seek locations within the city to achieve this goal.

Suggestions which candidates may give as to why different social and cultural areas develop and are maintained within urban settlements follow:

Economic

- Filtering out from the inner city to the suburbs with increasing wealth.
- Gentrification and redevelopment in the city centre attracts the more wealthy and single toward the centre.
- Student districts emerge due to the location of inner city universities and recent increasing growth in student numbers.

Social

- Family life cycle, i.e. single person lives nearer the urban centre, families are further out.

Cultural

- Colour/race/ethnicity induced migrations occur often to inner city areas for social, religious and cultural security.

Environmental

- People wishing to reduce their journey to work costs and time migrate towards the inner areas to be closer to business, shops and entertainment.
- Some people will migrate towards the fringe to be closer to the countryside and fringe facilities.

Level 3 8-10 marks	Developed knowledge and detailed understanding of why different social and cultural areas develop within urban settlements. Example(s) are evident and enhance the explanation.
Level 2 4-7 marks	Some knowledge and understanding of why different social and cultural areas develop within urban settlements. Unbalanced and narrowly focused on fewer points. Some use of example(s).
Level 1 0-3 marks	Basic knowledge of different social and cultural areas within urban settlements. Little use of example(s).

(c) Outline reasons for counterurbanisation. [10]

Counterurbanisation - the movement of both people and business from urban to non-urban areas.

Push factors of an expensive, congested, dirty and polluted city with more crime and poorer educational opportunity.

Economic

- Decline in manufacturing industry in the inner city so people have lost jobs and move to newer located industry in the fringe and countryside.
- Filtering out from the inner city to the fringe and countryside with increasing wealth.

Social

- Student districts emerge due to the location of inner city universities and the high growth in student numbers. This can be a trigger for the indigenous inhabitants to move out to the fringe and countryside.
- Family life cycle: single person nearer the urban centre, families further out, possibly to fringe and countryside.
- Crime in an urban environment can be perceived as more common than in the fringe or countryside.

Cultural

- Colour/race/ethnicity induced migrations occur often to inner city areas for social, religious and cultural security. The influx of an 'alien' cultural influence can upset the indigenous population who feel 'alienated' so decide to move away, possibly to the fringe and countryside.

Environmental

- Noise, smell, and dilapidated, run-down, facilities and built environment could play a part in dislodging people from an urban environment.

Pull factors of a more pleasant environment with more open space, more affordable land and fresh air which is safer for children in terms of traffic and crime.

Perceptions of life in the countryside influence counterurbanisation.

- The traditional rural settlement perception is that there is a good community spirit and a close-knit community where people are very sociable and meet regularly in a socially cohesive and amicable way to enjoy village functions.
- There is less crime in general and less vandalism in particular.
- It is peaceful, tranquil and quiet.
- There is little of any type of pollution.
- Any schools in the vicinity provide good education.
- Houses and gardens are large and people living here are, on average, wealthier.

Transport improvements have increased the accessibility of rural areas and have attracted an influx of jobs and people.

Employment opportunities have increased tremendously in the fringe and non-remote rural areas with the influx of manufacturing and quaternary industry and in particular the service industries of leisure, tourism and retailing.

Wealth. Many people, including the newly retired, are investing their growing wealth in more 'pleasant' properties in the fringe and countryside.

Simple reverse (inverse) comments should not be double credited. Trade depth for breadth.

Level 3 8-10 marks	Developed knowledge and detailed understanding of reasons for counter-urbanisation. Example(s) are evident and enhance the explanation.
Level 2 4-7 marks	Some knowledge and understanding of reasons for counter-urbanisation. Some use of example(s).
Level 1 0-3 marks	Basic knowledge of reasons for counter-urbanisation. Little use of example(s).

Q.3 (a) Use information from *Figure 3* to describe the pattern of pedestrian flow in the CBD of a city in the north of England. [7]

Suggestions

- The general pattern of pedestrian flow is a concentric one of roughly a square or rectangle shape.
- The outer isoline represents 25 pedestrians and the inner isoline represents 150 pedestrians, a difference of greater than 125.
- The highest activity of pedestrian flow is very small, about 25 metres east – west.
- The highest activity of pedestrian flow coincides with the location of the major shops, one of which is Halfords.
- The rate of flow changes more slowly in an east – west direction than in a north – south direction (interpreted as more rectangular/square).
- The rate of decrease in pedestrian flows is greatest going north from the centre.
- The rates along North Gate (and other identified roads) are similar along the lengths of the roads.
- The area of the indoor market is an area of relatively little change.
- Some streets have significant change along the length e.g. Town Hall street.
- The survey area of pedestrian flow is approximately 300 metres whereas the most extreme distance is from the south – west to north – east at approximately 550 metres.

No comparisons are required, just sufficiently supported descriptive points regarding the pattern of pedestrian flow displayed. No additional credit given for explanation.

Level 3 6-7 marks	Developed description of the pattern of pedestrian flow incorporating selective use of relevant dimensions, scale and locations.
Level 2 3-5 marks	Some description of the pattern of pedestrian flow with some incorporation of dimensions, scale and locations.
Level 1 0-2 marks	Basic description of the pattern of pedestrian flow with little or no incorporation of relevant dimensions, scale and locations.

(b) Evaluate *two* ways of representing data on maps *other than* isolines. [8]

'Candidates will be required to demonstrate that they are able to use and interpret choropleth, dot, isoline, flow and located statistical maps, histograms, scatter graphs, line graphs, frequency curves, long and cross sections and pie graphs.' (Specification page 16)

Mapping techniques

Choropleth maps

- These contain areas of different shading which is graduated to represent the strength of the data. The highest value is the densest shading, or most striking colour, and then each subsequent lower value is represented by progressively lighter shading or paler colour.
- They give a false impression of abrupt change at the boundary of areas.
- Any variations within areas are obscured, so smaller areas are better than larger ones.

Dot maps

- These give a good visual impression of distribution and density.
- They suffer from the fact that large numbers of dots are hard to count so precision in the presentation of data is lost.
- Like choropleth maps, spreading dots equally within areas may mask variations within each area.

Flow line maps

- These give a good visual impression of movement, either with the density of single lines giving the impression, or the width of lines or arrows being in proportion to the flow.
- Flow line maps can be difficult to interpret if too many movements are placed on one map.

Located proportional symbols

- These may comprise line graphs, bar charts/ histograms, pie graphs and pictograms and are an excellent way to save time when looking at a distribution: instead of looking at a symbol then looking at a map to which the information in the symbol relates, just one look at the map is required. Proportional symbols can be very effective using a range of symbols in striking colours.
    - Too much colour and variation can become confusing, however.

Real examples of where such techniques have been used or seen by candidates could illustrate the answer, such as choropleth maps for population density.

Level 3 7-8 marks	Detailed and developed knowledge and understanding used to evaluate two different ways of representing data on maps.
Level 2 4-6 marks	Some knowledge and understanding used to evaluate two different ways of representing data on maps. There may be an imbalance between the two ways. Some evaluation.
Level 1 0-3 marks	Basic knowledge used to describe two different ways of representing data on maps. Evaluation is absent. Any illustrations are small, imprecise and inaccurate.

(c) Outline the methods of data collection used in your investigation into a changing human environment. [10]

You should state clearly the question that you have investigated.

The expectation is that the response would give a variety of ways that information has been gathered. However, one intensive outline of one method, such as a questionnaire would be acceptable for a Level 3 mark.

A research investigation would not require the elements involved in primary fieldwork collection, but would require an intensive outline of the secondary resources used, including the names of websites and data derived.

Primary data collection

- May involve personal observation in the field such as environmental quality surveys, traffic counts and questionnaires.
- Primary data can be regarded as being derived from websites in its raw form as a table of statistics or a map; then the figures in the table are subjected to statistical manipulation and the map is simplified and/or annotated.

Secondary data collection

- This can be acquired from published sources such as books, directories, maps, journals, newspapers and websites. Names of websites and what data were derived are required for the more intensive outline.

Marking will depend on the quality of response and must be adjusted to suit individual studies presented.

Credit highly any valuable, positive and geographically appropriate comments **within the context** of a valid geographical enquiry.

Credit with caution simplistic, self evident, generalised and vague comments.

Level 3 8-10 marks	Developed knowledge and detailed understanding of the methods of data collection. Very good development using the context of the investigation.
Level 2 4-7 marks	Some knowledge and detailed understanding of the methods of data collection. Some development using the context of the investigation.
Level 1 0-3 marks	Basic knowledge of the methods of data collection. Basic development using generic and generalised concepts of data collection.

G3 Assessment Objectives Grid

Question	AO1 Knowledge & Understanding	AO2 Application	AO3 Skills	Total
G3 A Themes 1-3	13 (extend geographical ideas, concepts & processes)	7 (evaluations & connections between aspects of Geography)	5 (reach conclusions & communicate findings)	**25**
G3 A Themes 4-6	13 (extend geographical ideas, concepts & processes)	7 (evaluations & connections between aspects of Geography)	5 (reach conclusions & communicate findings)	**25**
G3B (a) **(b)**	3 6 (geographical concepts)	3 3 (apply understanding and evaluation of techniques)	4 6 (use a range of skills & techniques)	**10** **15**
	35 **46%**	**20** **27%**	**20** **27%**	**75** **(100%)**

Command Words WJEC A2 Geography

Account	**Give reasons for.**
Assess	This is an evaluative question - weigh up the importance of the subject. This means that there are a number of possible explanations/outcomes. You need to give the main ones and then say which you tend to favour.
Classify	Divide into groups or categories.
Discuss	Usually you are expected to build up an argument about an issue and to present more than one side of the evidence with supporting examples. This creates a written debate identifying both positive and negative points and then you must **reach a conclusion** from the debate. You should both describe and explain. Try to create a balanced answer and summarise your view at the end.
Evaluate	Evaluate requires and overall statement of the overall quality or value of the feature/issues being considered. You need to state a viewpoint, after consideration of the evidence. In both cases your own judgement/opinion is wanted. Although an opinion cannot be marked incorrect, credit is given for the justification of the position you've taken up. It is usually best not to adopt an extreme viewpoint; a balanced answer is best. With assess and evaluate, particularly in G4, there are many occasions where there are two sides to an argument and evidence should be put forward for both sides, or that certain strategies or actions may have beneficial outcomes but also costs attached to them. Opinions and conclusions should be presented clearly and supported with appropriate evidence and sound argument.
To what extent **How far do you agree**	Give possible explanations for and against and justify which you tend to favour
Examine	Investigate in detail, offering evidence for or against a point of view or judgement.

SECTION A

MARK BANDS: CONTEMPORARY THEMES IN GEOGRAPHY

Summary Descriptor	Marks out of 25	Criteria
Level 5 Very good	**21- 25**	• A response that demonstrates a high order of conceptual understanding and an appreciation of the holistic nature of geography within the context of the question. • Critical analysis, synthesis and assessment of the connections between the different elements of the subject. • Wide-ranging, thorough and accurate knowledge. • Detailed and possibly original exemplification. • Well-directed and well-annotated sketch maps/diagrams. • A well-structured, coherent and logical response. • Complex ideas expressed clearly with few, if any, errors in grammar, punctuation and spelling.
Level 4 Good	**16 - 20**	• A confident grasp of relevant concepts and principles. • Sound analysis, synthesis and assessment of some of the connections between the different elements of the subject. • Good factual knowledge and understanding. • Appropriate exemplification. • Appropriate, basically accurate, annotated sketch maps/diagrams. • The response is clear, coherent and appropriately structured. • The quality of English is consistently sound. <u>At the lower end</u> • Arguments may not be fully developed. • Some lack of balance. • Minor flaws in logical ordering or linguistic expression. • Diagrams not well-integrated.
Level 3 Average	**11 - 15**	• A reasonable grasp of relevant concepts and principles. • Arguments are partial with points limited in range, depth and development with only limited linkage. • A secure, straightforward base of knowledge and understanding. • Examples are superficial and may be variable. • Limited use of basic diagrams. • There may be some loss in coherence. • Language is correct but simplistic. <u>At the lower end</u> • An unfocused or potentially relevant response. • Weaknesses in structure and expression
Level 2 Marginal	**6 - 10**	• Some grasp of concepts and principles is evident, but there may be inaccuracies and misconceptions. • Arguments are weakly presented and most points are generalised or of partial relevance to the question with little or no linkage. • Some knowledge and understanding, but it is limited in scope. • There is limited use of examples. • Sketch maps/diagrams contain inaccuracies. • The response lacks fluency. • Expression may be poor and there are basic errors in the spelling of geographical terms. <u>At the lower end</u> • Understanding of the question is weak.
Level 1 Weak	**1 - 5**	• There is minimal understanding of subject material. • Organisation of material is poor and although occasional relevant points are made much is irrelevant. • The response demonstrates poor knowledge and understanding and contains errors. • Little use of examples or if evident they are irrelevant to the question. • The response may be incomplete or difficult to follow. • The answer is poorly written and contains basic errors in the spelling of geographical terms.

G3a

MARK SCHEME – JANUARY 2013

INFORMATION FOR EXAMINERS

Mark the answers according to the level descriptors in the generic mark bands and when determining the mark and taking everything into account, allocate it on the principle of 'best fit'. The mark awarded should be the one that most fairly reflects the achievement against the level descriptor. It is not necessary for every single aspect of a level descriptor to be met for the mark awarded.

If candidates answer in a way that is not anticipated by the mark scheme, but provide an acceptable answer to the question set, please use the generic mark scheme on pages 2 and 3 to determine an appropriate mark. If in doubt, please consult your team leader.

Theme 1 Extreme Environments

Q.1 'Climate is the key characteristic that makes a desert environment extreme.' Discuss. (1.1) [25]

Candidates:

(i) should show knowledge and understanding of the climatic characteristics of a desert environment that make it extreme;

(ii) should show knowledge and understanding of the biotic and soil characteristics of a desert environment that make it extreme;

(iii) should show the ability to discuss the inter-relationships between climatic, biotic and soil characteristics; better candidates should discuss the contribution of climate to the concept of extreme.

Answers should examine the climatic characteristics of deserts with low rainfall totals and high rainfall variability, extreme rainfall events, high evapotranspiration rates, large scale variations in temperature at a diurnal or seasonal level and aeolian elements. Candidates are likely to broadly agree with the statement, but acknowledge that desert soils and vegetation characteristics also contribute to the concept of 'extreme'. The soil types of desert environments, aridisols, solonchak and solonetz, result not only from the lack of moisture and high evaporation rates, but also from variations in geology, relief and the lack of vegetation cover. Reference should also be made to the need for special adaptations required by biota to overcome climatic and soil characteristics. Where only the desert climate is mentioned, the answer is unbalanced and unlikely to reach beyond the '**average**' **(Level 3)** category**.** The range of climatic, biotic and soil characteristics need to be discussed in a detailed and balanced way and the contribution of climate to the concept of extreme also needs to be discussed for candidates to reach the **very good (Level 5)** category. Expect examples to be well integrated in the answer. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

Q.2 Examine the positive and negative outcomes of human activity in the tundra environment. (1.5) [25]

Candidates:

(i) should show knowledge and understanding of the positive as well as the negative outcomes of human activity in the tundra environment;

(ii) should show the ability to examine the positive as well as the negative outcomes of human activity; better candidates should provide a more detailed examination.

Human activities that may be identified include tourism and mineral exploitation. It is not expected that these are considered in the context of both latitude *and* altitude, but better candidates may examine both. The approach to the question may be regional by investigating two areas such as arctic Canada and the Alps or thematic by looking at human activities individually. (Note that the specification mentions only alpine tundra, but the Teachers Guide refers to both alpine and arctic tundra). Candidates are likely to make reference to the negative ecological and environmental outcomes of human activity, due to the fragile and special qualities of the tundra with explanation and illustration of this fragility, as well as negative social outcomes and argue that there are also economic (employment), social (education) and environmental (conservation) positive outcomes of human activity. To reach the **very good (Level 5)** category of assessment, candidates need to examine the positive and negative outcomes and are likely to discuss the imbalance between the two. Expect examples to be well integrated in the answer. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

Theme 2 Landforms and their Management

Glacial Environments

Q.3 Examine different processes and landforms associated with climatic fluctuations in glacial environments. (1.1-1.5) [25]

Candidates:

(i) should describe and explain the relationship between colder periods and the processes and landforms of glacial erosion associated with glacial advance and high-energy levels;

(ii) should describe and explain the relationship between warmer periods and the processes and landforms of glacial deposition and fluvio-glacial deposition/erosion associated with glacial retreat;

(iii) should show the ability to examine the relationship between climatic fluctuations and associated processes and landforms; better candidates should provide a more detailed examination.

Geomorphological processes and associated landforms can be linked to global events that changed climate. Glacial advance occurs on different time-scales associated with fluctuations in climate such as during the glacials of the Pleistocene epoch and 'Little Ice Age' resulting in higher energy levels and the increased erosion in the form of abrasion and plucking, creating major landforms of glacial erosion. Glacier retreat associated with inter-glacials of the Pleistocene epoch and present-day global warming result in reduced energy levels and increased glacial deposition and fluvio-glacial processes and associated landforms. However, the relationship is often more complicated than this as can be understood through the study of the 'Younger Dryas', a short lived, but substantial, temperature fluctuation at the end of the last glacial cycle. This was probably driven by a massive influx of cold fresh water into the N. Atlantic due to recession of American ice and release of ice-dammed lakes, resulting in the re-growth of glaciers in upland Britain producing cirque moraines such as Cwm Idwal, Brecon Beacons. To reach **very good (Level 5)** there needs to be an examination of the relationship. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

Answers should deal with at least two glacial landforms. Some candidates may structure the whole answer around two or more selected landforms, but it is permissible for a broader approach to be taken with reference being made to a number of landforms by way of illustration.

Q.4 Assess the success of strategies used to manage glacial environments.
(1.6) [25]

Candidates:

(i) should show knowledge and understanding of the problems arising from the impact of glacial processes and/or landforms on human activity **or** from the impact of human activities on glacial environments;

(ii) should show knowledge and understanding of the strategies put in place to manage these impacts;

(iii) should show the ability to assess the effectiveness of the above strategies; better candidates should make an assessment of the effectiveness of the strategies discussed throughout, whereas the average candidate may only assess the strategies in passing or perhaps briefly in their conclusion.

Candidates need to demonstrate their knowledge and understanding of the problems arising from the impacts of glacial processes and/or landforms on human activity **or** the impact of human activity on glacial environments. There may be a discussion not only of the nature, but also of the seriousness of the impacts.

In order to assess the effectiveness of strategies adopted to deal with the impacts, candidates will need to briefly describe the strategies. Strategies will vary depending on the glacial environment chosen. The assessment should involve an evaluation of both the positive and negative aspects of the strategies adopted in relation to the aims of the strategies implemented. For a **very good (Level 5)** response there needs to be an assessment element. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

Coastal Environments

Q.5 Examine the role of sea level change in the development of coastal landforms. (1.2 & 1.3) [25]

Answers should deal with at least two landforms or a stretch of coast. Some candidates may structure the whole answer around two or more selected landforms, but it is permissible for a broader approach to be taken with reference being made to a number of landforms by way of illustration.

Candidates:

(i) should show knowledge and understanding of the effect of sea level rises on the development of coastal landforms and/or;

(ii) should show knowledge and understanding of the effect of sea level falls on the development of coastal landforms;

(i) should show the ability to examine the effects of sea level change on the development of the coastal landforms discussed; better candidates should provide a more detailed examination.

A change in sea level alters energy inputs and outputs and is therefore important for the development of coastal landforms. Although the daily movement of the tide influences micro-scale coastal features such as wave-cut notches, it is the macro-scale landforms associated with the Quaternary ice age and tectonic activity and the resultant major changes in base level that will be the focus of candidates' responses. In many cases it is not possible to be certain about the precise cause of an observed change in sea level, so it is the relative sea level change (the balance between sea level and land level) that is important. A positive sea level change, caused by either a rise in sea level or fall in land level gives rise to **transgressive** conditions and the drowning of coastal areas and/or the onshore migration of some landforms such as beaches. With sea level rise, marine processes dominate. As sea level rises, the zone of active marine processes also rises and the coastal zone is partially submerged. The result is distinctive landforms such as rias, fjords, fjards, estuaries, Dalmatian coastlines and shingle beaches (e.g. Chesil Beach). A negative sea level change, caused by either a fall in sea level or rise in land level, gives rise to **regressive** conditions and associated emergent features such as fossil cliff-lines and raised beaches where sub-aerial processes dominate. Since the question is about examining the effects of sea level change on the development of coastal landforms, for a **very good (Level 5)** response there needs to be an examination of the effects of sea level change, with reference being made to other factors that influence the development of coastal landforms such as geology, differences in energy levels and human intervention. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

Q.6 Assess the success of strategies used to manage coastal environments. (1.6) [25]

Candidates:

(i) should show knowledge and understanding of the problems arising from the impact of coastal processes and/or landforms on human activity **or** from the impact of human activities on coastal environments;

(ii) should show knowledge and understanding of the strategies put in place to manage these impacts;

(ii) should show the ability to assess the effectiveness of the above strategies; better candidates should make an assessment of the effectiveness of the strategies discussed throughout, whereas the average candidate may only assess the strategies in passing or perhaps briefly in their conclusion.

Candidates need to demonstrate their knowledge and understanding of the problems arising from the impacts of coastal processes and/or landforms on human activity **or** the impact of human activity on coastal environments. There may be a discussion not only of the nature, but also of the seriousness of the impacts. In order to assess the effectiveness of strategies adopted to deal with the impacts, candidates will need to briefly describe the strategies. Strategies will vary depending on the coastal environment chosen. The assessment should involve an evaluation of both the positive and negative aspects of the strategies adopted in relation to the aims of the strategies implemented. For a v**ery good (Level 5)** response there needs to be an assessment element. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

Theme 3 Climatic Hazards

Q.7 Describe and account for the distinctive characteristics of *one or more* climatic types. (1.3) [25]

Expect candidates taking the temperate climatic region to largely limit their responses to the West European climatic type and candidates taking the tropical climatic region to limit their responses to one climatic type e.g. the monsoon type or the savanna type. The question does not demand that candidates deal with the entire climatic region, but some may choose to do this and this is equally very acceptable.

Candidates should clearly describe distinctive climatic characteristics of their chosen climatic type in terms of temperature, precipitation (type, amount and distribution), prevailing winds, humidity and pressure, together with important diurnal and seasonal variations. In accounting for the above candidates will need to cover the basic factors influencing the formation and location of the distinctive climatic type chosen and its seasonality in terms of:

(i) Global atmospheric circulation;

(ii) The seasonal movement of the ITCZ and pressure and wind belts associated with the apparent movement of the sun's overhead position through the year;

(iii) The effects of warm and cool ocean currents, orographic influences and temperature differences between continental land masses and ocean waters.

To reach the **very good (Level 5)** category, reference needs to be made to explanations that are specific to the particular climatic type(s) chosen, which may include orographic influences, variations in the path of upper jet streams and the interaction of different air masses. To reach this category, students should also demonstrate a **detailed** knowledge the climatic characteristics of their chosen climatic region. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

Q.8 Discuss strategies to reduce the impact of hazards associated with high-pressure systems. (1.6) [25]

Candidates:

(i) should show a knowledge of the damaging effects of hazards associated with high-pressure systems;

(i) should show an understanding of the strategies employed, but better candidates will show more detailed knowledge of a wider range of strategies;

(iii) should show the ability to discuss the strategies implemented to reduce the impact of hazards associated with high-pressure systems; better candidates should provide a more detailed discussion.

Within either the tropical or the temperate region, candidates may refer to the effects of a hazard associated with anticyclonic situations. The effects discussed are likely to be both environmental and human (demographic, economic and social).

The environmental effects of hazards associated with high-pressure systems in tropical climatic regions may include the effect on the water table, soil–water movement, land degradation and vegetation. The effects on population might include migration, food supply problems, famine and health. The environmental effects of hazards associated with high pressure systems in temperate climatic regions may include impacts on water–resource systems when rivers may be used for water supply, reservoirs emptied and HEP production reduced. The effects on population may include water rationing. Although for temperate regions the emphasis is likely to be on a drought spell, some candidates may refer to the hazards associated with winter anticyclones such as frost and fog plus pollution leading to impacts such as difficult driving conditions and dangers for shipping.

When discussing the measures taken to reduce the impacts of hazards associated with high- pressure systems, candidates may present logically sequenced points progressing from monitoring, prediction and warning, immediate response to lessen the impact once it has occurred to long-term planning.

To reach **very good** (**Level 5**) a well-balanced answer with some depth of discussion is needed. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

Theme 4 Development

Q.9 Account for some of the changes in global patterns of development.

(1.4) [25]

Candidates:

(i) should show a knowledge and understanding of where some of the changes in global patterns of development are taking place;

(ii) should show a knowledge and understanding of why changes are taking place and the associated effect on global patterns of development.

Whilst candidates may refer to particular examples of change when identifying changes, these should be linked to patterns of change by indicating that these examples are illustrative of more general aspects of change. In accounting for these changes reference needs to be made to the factors responsible for change including changing definitions and concepts of development, economic forces, changing external relationships and changing internal conditions which will influence a particular country's or world region's position in the global development spectrum. Reference also needs to be made to the effect of change on accepted patterns of world development such as the North/South divide and LEDC/MEDC divisions. The emergence of South East Asian NICs, the BRIC countries (Brazil, India, China and Russia) and CIVETS (Colombia, Indonesia, Vietnam, Egypt, Turkey, South Africa) countries may be used as a good illustration of the effect of economic change on changes in pattern. In general development changes are seen as positive, but in the case of a number of African countries the change may be negative and the recognition of this and the reasons for it are worthy of good credit. Answers need to provide clear explanatory comment together with reference to altered patterns to get into the **very good (Level 5)** category of assessment. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

Q.10 'Reducing the development gap has its costs.' Discuss. (1.6) [25]

Candidates:

(i) should show knowledge and understanding of some of the strategies implemented to reduce the development gap;

(ii) should show knowledge and understanding that each of the different strategies have their associated costs as well as benefits; better candidates should provide a more detailed discussion.

Candidates may discuss the role of aid, free and fairer trade, FDI and initiatives for debt reduction. A distinction may be made between 'top-down' and 'bottom-up' strategies. Answers must discuss the costs and benefits of the strategies employed in order to achieve a '**very good**' (Level 5) category of response, but this does not necessarily have to be equally balanced. Evaluative comment should make reference to both the positive (improved human development indicators and economic growth rates) and negative effects on development (such as inequality, exploitation, unfair terms of trade, demands of SAPs, corruption and environmental deterioration) of the initiatives discussed. The discussion may be supported by appropriate exemplification, with the candidate illustrating their discussion with reference to at least one named country such as Vietnam, where although FDI, improvements in trade (membership of ASEAN 1995 and the WTO 2006), together with aid (DFID £50 million/yr) have operated to improve human development indicators (poverty fell from 58% in 1992 to 12% in 2010) and economic growth rates significantly since the 1980s, there have been negative effects (inequality, corruption and environmental deterioration) associated with these initiatives. Some candidates may focus their discussion on the costs associated with aid; this approach is acceptable, but will need to be developed in considerable depth and detail to get beyond **good (Level 4)**. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

Theme 5 Globalisation

Q.11 Account for some of the changes in global patterns of manufacturing.
(1.3) [25]

Candidates:

(i) should show knowledge and understanding of the changing nature and distribution of global manufacturing activity;
(ii) should show a knowledge and understanding of the reasons for these changes.

Candidates are likely to refer to the changing nature and distribution of global manufacturing activity linked to the decline of traditional manufacturing in MEDCs and the increased developments in manufacturing in NICs, RICs and LEDCs. Candidates will probably develop their answers by discussing the rapid expansion of the NICs in terms of their percentage share of manufacturing output. When examining the reasons for such changes, candidates are likely to focus on the economic (role of TNCs, product life cycle and NIDL, consumer demand in MEDCs), technological changes (improvements in transport, use of the internet, tele-sales) and political changes (trading blocs and role of international organisations) which have resulted in increasing manufacturing production in LEDCs. Candidates have the opportunity to link the factors with the change in the distribution of manufacturing activity. Answers need to provide clear explanatory comment together with reference to altered patterns to get into the **very good (Level 5)** category of assessment. Expect examples to be well integrated in the answer. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

Q.12 'The costs of globalisation outweigh the benefits.' Discuss. (1.4 ,1.5, 1.6) [25]

Candidates:

(i) should show knowledge and understanding of the costs that result from globalisation;

(ii) should show knowledge and understanding of the benefits that result from globalisation;

(iii) should show the ability to assess the overall impact of globalisation: better candidates should make a reasoned assessment of whether the globalisation results in more costs than benefits throughout, whereas the average candidate may only make their assessment in passing or perhaps briefly in their conclusion.

The question is a very open one and candidates may approach it in a number of different ways. Candidates may focus entirely on the globalisation of economic activity or widen their discussion to include the costs and benefits of political and cultural globalisation. If the focus of the response is on the globalisation of economic activity reference needs to be made to the fact that globalising TNCs have the opportunity to choose locations for their operations that they perceive to be most advantageous. Costs are a prime consideration. Some locations are less favoured both in MEDCs and LEDCs (particularly sub-Saharan African countries). Such regions are the losers. The process of globalisation also has negative social and environmental effects on MEDCs, LEDCs and NICs. There are also benefits from globalisation. A global shift of manufacturing and, more recently services, to NICs and RICs has brought opportunities for employment and economic development to many parts of the world, especially India, China and south and south-east Asia as well as benefits to investing countries and companies. Expect examples of the operations of named TNCs/MNCs and their positive and negative impacts on economic activity, society and the environment to be well integrated into the answer. The costs of cultural globalisation include the lack of local cultural diversity, the loss of cultural identity and the development of a homogenised, westernised consumer culture with benefits of greater cultural integration. Benefits of political globalisation include the reduced possibility of war between developed countries, an increase in free trade between countries, the propagation of democratic ideals (such as the 'Arab Spring'), increased interdependence of nation-states and the resolution of global environmental problems like cross-boundary pollution, over-fishing on oceans and climate change. Costs of political globalisation include the rise of fundamentalism and associated terrorism. To reach the **very good (Level 5)** category of assessment, candidates need to discuss the statement. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

Theme 6 Emerging Asia

CHINA

Q.13 Examine the factors affecting the growth of new industries in China. (1.2) [25]

Candidates:

(i) should show knowledge and understanding of the factors that have led to the growth of new industries in China;

(ii) should show the ability to examine the different factors discussed; better candidates should provide a more detailed examination.

Candidates may identify how industry in China has grown in the last thirty years, with the decline of many old manufacturing industries owned by the state (SOEs) with mainly strategic SOEs left such as steel, petrochemicals and cars gaining ground in global markets; the transfer of SOEs to private ownership leading to increased efficiency and modernised production; the crucial role of FDI with foreign firms located in SEZs; the concentration of new industry in coastal cities and SEZs; the growth of new industries – all kinds of modern technology – and the growth of export markets based on low labour costs; rural–urban migration especially to east coast cities and the growth of many new small manufacturing firms – TVEs – in towns and cities. Other changes include fewer barriers to collaboration with foreign partners; more opportunities for using consultants and contract workers; increased productivity; more innovation; more high-end production; increased competition within China and increased commercialisation of scientific and technological research. Candidates also need to identify factors responsible for these changes that may include the failure of Mao's socialist policies to create wealth and industrial prosperity, the realisation that China was being left behind in the global community, the need to modernise industry rapidly with the aim to get transfer of technology from foreign firms through FDI, the Open Door policy of Deng in 1978 and the need for resources e.g. oil and minerals for industrial development. Expect '**very good**' (**Level 5**) answers to show clear understanding of the factors involved and to support their answers with specific illustrative detail and examples. To reach the **very good (Level 5)** category of response, expect an examination of the factors discussed. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

Q.14 'In China, economic growth is more important than the environment.' Discuss. (1.6) [25]

Candidates:

(i) should show some knowledge and understanding of the different ways in which economic growth in China is compromising the environment; better candidates will show a more detailed knowledge and understanding;

(ii) should show the ability to discuss the extent to which economic growth and environmental protection can both be achieved; better candidates should provide a more detailed discussion.

The relationship between the environment and economic growth is complex and poses something of a conundrum. As a country develops it uses more energy and mineral resources to support manufacturing. More offices, transport and houses all use natural resources. Most human activity, domestic and industrial, produces waste which has to be disposed of and in turn affects air quality. The optimistic view suggests that the range of demands on the environment can be managed in order to ensure a sustainable future. As a country becomes more developed it can develop the technology to use resources more sustainably and efficiently. Theoretically, the more wealthy a country the more it can afford environmental protection and could limit its environmental and ecological footprint. There is a growing environmental awareness among grassroots organisations and communities in China, but serious concern for environmental sustainability within the Politburo is still overridden by the desire for economic growth. Despite that, the Government response to Rio and Kyoto suggested some recognition of the need for sustainability and the Chinese signed the Kyoto Protocol in 1998, less than a year after it was set up. This was also intended to establish China as a leader of developing nations. China's Copenhagen pledge is to reduce its CO_2 emission per unit of GDP by 40 – 45% by 2020 compared to 2005 levels, raise the level of non-fossil fuels in primary energy consumption to 15% and increase forest coverage by 40 million hectares. Environmental concerns are being taken seriously, but bureaucratic problems and some corruption inhibit national policies being put into practice in local communities. For **very good (Level 5)** responses expect a detailed and balanced discussion. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

INDIA

Q.15 Examine the factors affecting the growth of industries in India. (1.2) [25]

Candidates:

(i) should show knowledge and understanding of the factors that have led to the growth of industries in India;

(ii) should show the ability to examine the different factors discussed; better candidates should provide a more detailed examination.

Candidates may identify the growth of manufacturing industries, service and financial industries and in agriculture. Economic change includes the growth of modern steel, pharmaceuticals, textiles, clothing, and a substantial high-tech electronics sector e.g. mobile phones and the growth of service industries – call centres, back office jobs, outsourcing from Europe / US and the growth of entertainment industries (Bollywood). The factors responsible for this growth include economic change (the emergence and investment policies of transnationals together with the growth in Indian firms and also of an urban middleclass, educated population who have become consumers themselves, providing a large market for new consumer goods), technological factors (the speed and distance over which communications and movement can now take place due to computer, transport and communication technologies) and political change (the role of governments in encouraging outside investment e.g. the development of SEZs to attract FDI in Mumbai and Gopalpur). Candidates are most likely to argue that India's rural economy is still very important and has changed little, although there has been some developments in agribusiness in some states due to technological developments (Green Revolution) and political reform. Expect **very good (Level 5)** answers to show clear understanding of the factors involved and to support their answers with specific illustrative detail and examples. To reach the **very good (Level 5)** category of response, expect an examination of the factors discussed. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

Q.16 'In India, economic growth is more important than the environment.' Discuss. (1.6) [25]

Candidates:

(i) should show some knowledge and understanding of the different ways in which economic growth in India is compromising the environment; better candidates will show a more detailed knowledge and understanding;

(ii) should show the ability to discuss the extent to which economic growth and environmental protection can both be achieved; better candidates should provide a more detailed discussion.

The relationship between the environment and economic growth is complex and poses something of a conundrum. As a country develops it uses more energy and mineral resources to support manufacturing. More offices, transport and houses all use natural resources. Most human activity, domestic and industrial, produces waste which has to be disposed of and in turn affects air quality. The optimistic view suggests that the range of demands on the environment can be managed in order to ensure a sustainable future. As a country becomes more developed it can develop the technology to use resources more sustainably and efficiently. Theoretically, the more wealthy a country the more it can afford environmental protection and could limit its environmental and ecological footprint. Environmental issues have been creeping up the political agenda in India, but the challenges of addressing poverty *as well as* managing the environment sustainably are huge. After the UN Conference on the Human Environment 1972, environmental issues were included in the national 5-year Plans. In the 1980s a Ministry of Environment & Forests was created and now there are numerous autonomous agencies, offices, institutions set up by national and state governments. There is a will to have environmental improvement, but often this conflicts with other demands and, in common with most other countries, often puts government departments at odds with each other. India faces many of the same environmental issues as developing countries. It is challenged by the need to meet the demands of industrialisation for development while understanding the necessity for environmental sustainability. The rates of urban and rural change make it hard to ensure that the best environmental decisions are taken. India's democracy can hinder progress. The sheer scale of the environmental challenges is daunting, yet progress is being made at national and grassroots levels. For **very good (Level 5)** responses expect a detailed and balanced discussion. **Average (Level 3)** responses will be characterised by secure, but generalised, content, whilst **good (Level 4)** responses should contain good factual knowledge and understanding.

G3 Assessment Objectives Grid

Question	AO1 Knowledge & Understanding	AO2 Application	AO3 Skills	Total
G3 A	13 (extend geographical ideas, concepts & processes)	7 (evaluations & connections between aspects of Geography)	5 (reach conclusions & communicate findings)	**25**
G3 A	13 (extend geographical ideas, concepts & processes)	7 (evaluations & connections between aspects of Geography)	5 (reach conclusions & communicate findings)	**25**
G3B (a) **(b)**	3 6 (geographical concepts)	3 3 (apply understanding and evaluation of techniques)	4 6 (use a range of skills & techniques)	**10** **15**
	35 **46%**	**20** **27%**	**20** **27%**	**75** **(100%)**

INFORMATION FOR EXAMINERS

Mark the answers according to the level descriptors in the mark bands and when determining the mark and taking everything into account, allocate it on the principle of 'best fit'. The mark awarded should be the one that most fairly reflects the achievement against the level descriptor. It is not necessary for every single aspect of a level descriptor to be met for the mark awarded.

If candidates answer in a way that is not anticipated by the mark scheme, but provide an acceptable answer to the question set, please use the generic mark scheme on page 2 to determine an appropriate mark. If in doubt, please consult your team leader.

GENERIC MARK SCHEME FOR G3b

G3B contains 10 two-part questions which, for Part (a) are marked out of 10 marks and for (Part b) are marked out of 15 marks.

Part (a) is marked in three levels.

Level	Description of quality	Marks Range	Characteristics of level (It is not necessary to meet all of the characteristics to be placed in a level)
3	Very good Good	8-10	Very good knowledge and understanding used critically which is applied to aspect(s) of research enquiry examined. The work is obviously based on research and uses it to provide good supporting evidence. A clear, coherent mini-essay that is grammatically correct. May include well-annotated maps and/or diagrams to support answer. Allow full marks for thorough description.
2	Average	4-7	Good knowledge and understanding with some critical appreciation of the aspect(s) of research enquiry examined. A clear structured mini-essay that uses good quality of written communication but argues points soundly rather than strongly. Appropriate diagrams and/or maps not always fully labelled.
1	Weak	1-3	Some limited knowledge and understanding of aspect(s) of research enquiry examined but some points may be partial and lack exemplar support from research. 'All I know' rather than an answer to the question. Language is variable; lacking paragraphs and may have weak grammar and syntax.

Part (b) is marked in four levels.

Level	Description of quality	Marks Range	Characteristics of level (It is not necessary to meet all of the characteristics to be placed in a level)
4	Excellent Very Good	13-15	Very good knowledge of the topic studied and a critical awareness of the route to enquiry and findings as applied to the topic in question. Provides very good support from own research. Written in a sound, coherent essay style which is grammatically correct with a sequence of ideas that enable the question to be answered fully. Concludes in relation to the question. May include well-annotated maps and/or diagrams to support answer.
3	Good	9-12	Good knowledge of the topic with some gaps. Understanding of the route to enquiry and findings is present with some critical awareness, but this may be sound rather than strong. A clearly structured essay that uses good quality of written communication. Appropriate diagrams and/or maps not always fully labelled.
2	Average Marginal	5-8	Knowledge and understanding present but some points may be partial and lack exemplar support from research theme studied or may only be of potential relevance to the research topic. Language is straightforward and will possibly lack paragraphing. Perhaps going off on a tangent with an 'all I know' answer.
1	Weak	1-4	Some knowledge and understanding but with gaps and misconceptions that indicate an inability to understand the question. Evidence that the research was superficial. Only limited support from research. Language is variable and slips occur.

GB3b

CONTEMPORARY THEMES AND RESEARCH IN GEOGRAPHY
MARK SCHEME - WINTER 2013

Q.1 (a) Outline the importance of planning to the success of an investigation into (context). [10]

There is no requirement to draw parallels with their own study, but this should be credited if it helps to develop the answer. Candidates might demonstrate knowledge of the planning stages involved in the sequence of investigation, found in the WJEC document, 'Enquiry approach which can be applied to G1, G2 and G3B'.

The stages from this document can be summarised as:
1. Planning Stages of the Investigation.
2. Data Collection.
3. Data Refinement and Display.
4. Description, Analysis and Interpretation.
5. Conclusion and Evaluation.

From the document the **planning stage** includes the following detail.
- Develop your knowledge of the topic by consulting geographical literature or searching the Internet.
- Decide on issue to be investigated and develop your knowledge of the places being studied.
- Decide on the location for the investigation and develop your knowledge of the place(s) being studied.
- Visit your chosen location for a pilot survey.
- Undertake a risk assessment.
- Obtain any equipment (if required) checking availability and how to operate it.
- Prepare recording sheets/ design questionnaire surveys.
- Decide on sampling strategy/ies.
- Check weather conditions if relevant.
- Decide on day, date and time of survey.
- Arrange appointments if your investigation involves interviews/visits.

Alternatively candidates may approach the question by outlining **planning elements** in **all** five stages. Descriptions should be **relevant** to the theme under investigation, while better candidates may link their description specifically to their context.

From the WJEC list of command words: '**outline**: Give a brief summary of the main characteristics'. Better responses may comment on the relative importance of planning criteria.

Level 3 8-10 marks	A detailed description and sound understanding of the necessary planning process in the context of the selected research area perhaps developed in some depth, with some appreciation of its importance. Candidates can access this level without reference to their own investigation, although if mentioned it should be given credit.
Level 2 4-7 marks	Some description of the planning process which may be either, generic in nature, or incomplete or unbalanced in coverage. Candidates may provide arguments for the planning processes described.
Level 1 1-3marks	A simple and/or basic description of the planning process, which will probably lack depth and detail or simply a list of the general planning stages.

Q.1 (b) Summarise the findings of your personal research into (context) *and* critically examine your methods of data presentation. [15]

You should state clearly the title of your research.

The content will depend on the investigation undertaken, but in their answers candidates should summarise the findings drawn from their personal research, and discuss the methods used to present information in a critical manner.

Methods of presentation should be varied and appropriate for the topic. Methods of presentation may be supported by diagrams and illustrative material.

From the WJEC list of command words: '**examine**: candidates are expected to investigate in detail, offering evidence for or against a point of view or judgment. Thus candidates are expected to make some sort of judgment about how well their methods of presentation support their findings'.

Credit breadth and / or depth; responses which give one aspect – either findings or data presentation – in more depth than the other are less likely to be awarded Level 4 marks.

Level 4 13-15 marks	Answers summarise clearly the findings of their investigation, with supporting evidence. An appropriate range of presentational methods are discussed, and are linked to the findings and data used. Answers that reach this level are likely to provide a balanced argument about the suitability of the methods used, which may in turn be supported by evidence.
Level 3 9-12 marks	Answers summarise the findings of their investigation, possibly with some supporting evidence. Presentational methods are covered but this may be either a range of appropriate methods with limited discussion or fewer but in greater depth. Answers might contain a generalised discussion of the suitability of the methods used or cover one or two in depth.
Level 2 5-8 marks	Answers contain a brief summary of the findings of their investigation. Some discussion of the suitability of the methods of presenting information. Answers with no reference to the context could reach this level. Answers that only address one part of the question can reach the top of this level.
Level 1 1-4 marks	A basic answer that briefly describes the findings and/or methods.

G4 Assessment Objectives Grid

Question	AO1 Knowledge & Understanding	AO2 Application	AO3 Skills	Total
1	4 (concepts of place, space and diversity)	3 (interpreting & unfamiliar context)	3 (analyse and synthesise geographical information)	10
2	3 (select human processes underpinning concepts, examples)	4 (application in unfamiliar contexts)	3 (investigate questions and issues)	10
3	3 (people-environment interactions)	3 (analysis and unfamiliar contexts)	4 (investigate questions and issues and communication)	10
4	7 (extend geographical ideas, concepts and processes)	11 (consider new ideas and developments, evaluation)	7 (synthesise information, reach conclusions, and communicate findings)	25
5	7 (extend geographical ideas, concepts and processes)	11 (evaluation of viewpoints, extend geographical ideas, concepts and processes)	7 (reach conclusions and communicate findings)	25
Total	24 (30%)	32 (40%)	24 (30%)	80 (100%)

GENERIC MARK SCHEME

These descriptors give an outline of the qualities expected of answers at each level. Mark the answers according to the level descriptors and when determining the mark and taking everything into account, allocate it on the principle of best fit. The mark awarded should be the one that most fairly reflects the achievement against the level descriptor. It is not necessary for every single aspect of a level descriptor to be met for the mark awarded.

Normally, these descriptors will be written into the mark scheme for a specific examination, and may be modified beyond these descriptors to accommodate the demands of individual questions.

If a candidate answers in an unanticipated way, but it is clear that there is some substance to the answer, the following guidelines may be used in allocating a mark to the answer. If in any doubt, please consult your team leader.

Mark bands - 10 mark questions

Explanation of some kind is the most likely demand of these questions. For other kinds of command, comparable qualities to those given for explanation can be expected.

Level 3 (8-10 marks)	Answers at this level have a good explanation. Explanations may be brief or quite long; their distinguishing quality is that they are clear. Answers need not be fully comprehensive but should be extensive enough to cover most aspects that can be reasonably expected for the question posed. Points of explanation should have some supporting evidence, either from resources provided or from knowledge gained from the candidate's own studies. If the question has more than one aspect, then each of these will all be addressed soundly.
Level 2 (4-7 marks)	Answers in Level 2 will either (i) contain a small amount of clear explanation but several points that might reasonably be expected will be missing, or (ii) be answers that are more comprehensive but the explanation is not really clear, or (iii) be clear on several points but support for the explanations will be missing or be too generalised, 'as in the Amazon'. If the question has more than one aspect, one may be dealt with adequately, but others may be underdeveloped, leading to an unbalanced answer.
Level 1 (1-3 marks)	In answers at this level there will only be the beginnings of an answer to the question, and these will also have major weaknesses. Explanations will be unclear or may be missing altogether. Correct information that could be relevant may be stated, but it will be left to the reader to put two and two together. Answers that deal with more than one point will be over simple on all of them. Any support that is given will be very general 'e.g. Africa'. If a question has more than one aspect, only one may be addressed and others ignored. Answers may be incorrect or faulty in some other way.

Mark bands - 25 mark questions

These questions will have a strong evaluative element. Some form of debate needs to be engaged in to reach the two top levels. Some questions may have a command for description or explanation in the early part of the wording. If only that part is attempted, answers can gain a maximum mark of top Level 3.

Level 5 (22-25 marks)	A range of evidence supporting more than one possible conclusion will be clearly stated. There will be a good attempt to weigh up the evidence. This may be by showing that one piece of evidence carries more weight than others, or that there are far more points in favour of one point of view than for any others. These questions will often have a 'how far' or 'to what extent' element, and evidence given will be used deal with such aspects. The structure of the answer will be evaluative throughout. Conceptual understanding and specific knowledge will both be very good. Answers will be well ordered and logical, with clear expression in the chosen language.
Level 4 (17-21 marks)	A reasonable amount of evidence on both sides of the debate will be presented here. There will be some attempt to weigh up the evidence in order to show that it points more one way than the other, or to try and assess 'how far'. These will either be limited or confined to just one or two sentences, or unbalanced, being too sweeping for one view over others. All other aspects of the answer expected up to Level 3 will be present. Conceptual understanding or specific knowledge may be good, but not equally strong on both. Answers will have only minor flaws in logical ordering or linguistic expression.
Level 3 (10-16 marks)	These answers will have a good explanation. There will be some attempt to show that there are arguments on both sides of the case, but these will be few, scattered and in most instances, not supported by any evidence. There may be some evidence of conceptual understanding, and/or the odd piece of specific knowledge. Structure and expression may have flaws.
Level 2 (5-9 marks)	Answers at this level will be mainly simple description or basic explanation, with evidence of some of the comparable qualities expected at Level 2 for the 10 mark questions. Any attempt to deal with the evaluative components will be brief, and either be very simple, confined only to one side or have very little support. There will be weaknesses of structure and expression.
Level 1 (1-4 marks)	Some relevant knowledge may be stated, but few points will have any element of explanation. Any evaluation will be a simple statement of a point of view without any valid supporting evidence. The structure may be muddled and expression weak or unclear. Planning notes or fragments can be given a mark in this range.

If candidates answer in a way that is not anticipated by the Mark Scheme, but provides an acceptable answer to the question set, please use the generic mark bands to determine an appropriate mark.

GCE GEOGRAPHY G4

MARK SCHEME

JANUARY 2013

For all questions, the following qualifying words are available for use in marking;

Accomplished
Competent
Intermediate (+/-)
Basic
Beginnings

Accomplished - a clear answer covering almost all aspects of the question, with relatively minor, if any, faults.
Competent - an answer addressing many aspects of the question, but with some clear shortcomings.
Intermediate (+/-) - an answer to the question, but mainly simple with one (lower -) or more (upper +) points of better quality.
Basic – an answer, but all very simple or superficial or brief or only very partial in coverage of what could be expected.
Beginnings - not really an answer to the question, but may contain occasional relevant material.

SECTION A

Q.1 Suggest ways in which cities may be classified. [10]

The Resource Folder shows four ways. On page 6, there is detail of the GaWC classification along with growth rates. On page 7 there is unemployment rates and a liveability index. Candidates may introduce their own; size is likely with mega-cities and millionaire cities. Provided there is a sound and reasoned basis for the classification these should be accepted. The question asks for ways, plural, so more than one is needed for full marks. Classification should involve more than extremes, so good answers should have classes, or at least, middle terms between extremes. There should be some support or evidence to back up the classifications suggested.

Classification - clarity for basis of classification

Classes - extremes accepted but some middle term/class for high marks

Support - evidence to back up most of suggestions

Level 3 8-10 marks	At least two ways should be considered where there is clarity about the basis for classification. Each classification should have three classes or sound suggestion of middle ground. Support or evidence should be named cities with clear figures or basis for boundaries. Agreement between classifications, with evidence, can support Level 3.
Level 2 4-7 marks	Either, just one way will be clear, have classes (3) three levels and support with any others poorer. Or coverage of more than one but weak on one or all of clarity, middle terms or support.
Level 1 1-3marks	Some suggestions made, but the basis may be unclear, be just polarised extremes, and provide very little or no support.

Q.2 Explain how disparities in wealth may be reflected in the demand for water in cities. [10]

Information about the wealth of Toronto and Nairobi can be picked out of information on the two cities in *Figures 1* and *2* on pages 4 and 5. Demand, both for recent years and projected into the future are given in *Figures 16* to *20* on pages 12 and 13. Candidates may pick up on inequalities within the cities, particularly for Nairobi that is mentioned in several places. Good answers should have clear explanations. Such answers may show understanding derived from G2.

Wealth - description of clear differences

Demand - understanding of different demands

Support - links between the two backed up by evidence

Level 3 8-10 marks	Either, information on the demand for water for at least two cities will be provided. The cities need to represent some disparity in wealth between them. Or, information for one city is given bringing out disparities of wealth and water demand within the city. In all approaches, the relationship between water demand and wealth needs to be made clear. Most points made will be supported by evidence.
Level 2 4-7 marks	Answers with content similar to above but with less clarity on either wealth, demand, or the support given may occur here. Answers that are very good on demand without much on wealth, or good on differences on wealth without demand, are likely at this level. Some linkage between wealth and demand given. Some relevant support.
Level 1 1-3marks	Some relevant but undetailed points on either disparities in wealth or demand for water are likely here. Any support given will be very generalised, not very relevant, or may not be provided at all.

Q.3 Explain possible threats to water supplies for cities. [10]

Figures 23 - 25 on page 15 introduce ideas related to changing rainfall patterns. Candidates with a good grounding in G1 may well make good use of information on evaporation rates at higher temperatures from *Figure 20* on page 14, where challenges and the water cycle may provide starting points. Candidates may introduce their own information or develop ideas from the prompts on the water-cycle diagram. There is a good deal of other material on water supply usually giving some lead to why they might not last forever.

Threat - nature of the threat

Water supply - impact on water supply

Support - evidence from place, or other details, e.g. precise figures

Level 3 8-10 marks	Two or more threats will be identified with a clear explanation of how these may arise in the future and in what ways they pose a threat. Evidence and support will be given for most points that are made.
Level 2 4-7 marks	One threat may be dealt with soundly but any others will be clearly incomplete in some way. Alternatively, two or more threats may be mentioned but none explained to more than a moderate degree. Some support will be given.
Level 1 1-3marks	Threats may be listed but very little development or explanation is given. Support may not be given, but if attempted, it is generalised and superficial.

Q.4 'It is difficult to manage water sustainably in cities.'
How far is this statement true? [25]

Ideas on demand management through conservation and improvement are given in *Figures 26* and *27* on page 16, and some ways of managing supplies by increasing them are to be found in *Figures 27-29* on page 17. Much of the other material on demand, supply, threats and management found throughout the Resource Folder can be used here too. Good answers need to consider ways in which both demand and supply can be managed, and consider the ease or difficulty involved with these. This may cover a very wide range of factors including economic, technological, social, political or others. Candidates need to develop these points so that they can make and support a judgement. There is no penalty for drawing on material already referred to in earlier questions as these were intended to provoke thought that is relevant here.

Supply/demand issues - opportunities, constraints and challenges

Management - strategies and approaches to water

Sustainability - short/long term, consequences, factors and possible conflicts

Assessment - responding to 'how far'

Support - evidence from places, statistics or other good knowledge

Level 5 **22-25 marks**	An accomplished answer. Answers at this level will discuss management of supply/demand extensively with constant reference to cities. Opportunities, difficulties and constraints will be identified along with some degree of their seriousness. 'How far' will be considered throughout. Extensive evidence will be provided in support. The answer will be well structured and logical, and expressed in clear language.
Level 4 **17-21 marks**	A good answer, it may have accomplished parts, but with less detail on demand/supply, or some lack of depth on management, or less focus on cities, or limited consideration of 'how far'. Some good evidence will be given. A well-ordered answer with good expression.
Level 3 **10-16 marks**	A sound answer involving some management issues, but with either little of focus on cities, or lack of depth on most points considered. 'How far' will be present but limited towards the top of the range, or missing or token at the lower end. A little evidence will be given. Minor flaws in organisation and expression are likely.
Level 2 **5-9 marks**	Some starting points or valid points will be raised, but limited and shallow. 'How far' may be mentioned but understanding of it is weak and simplistic. Evidence will be poorly linked to the answer. Frequent problems with structure and expression will be present.
Level 1 **1-4 marks**	Not really an answer. Isolated points that could be relevant to the answer are made, but are largely up to the reader to work out. The words 'how far' may be included, but little understanding of the idea is shown. Poor or no evidence is given. The whole answer will be poorly organised and with poor expression.

SECTION B

Q.5 Describe ways in which technology can increase food production. How far are such ways acceptable and sustainable? [25]

There is likely to be very little in the Resource Folder to help with this question, but if any candidate does use such material, there is no penalty at all. Most candidates are likely to consider genetically modified crops or animals, or Green Revolution technologies such as new varieties and irrigation, or introduce aeroponics and hydroponics, or consider vertical farms or other technological developments. A broad definition of technology should be allowed so even simple ideas of mechanisation being introduced in areas of subsistence agriculture are perfectly acceptable. Candidates can be expected to reach up to the top end of Level 3 by clear and detailed descriptions of two or more ways technology can increase food production. To reach Levels 4 and 5 candidates do need to consider ideas of acceptability and sustainability and come to some assessment of 'how far'.

Technology - specific detail

Food production - quantity, quality

Acceptable/sustainable - health, economic, social, long/short term

Assessment - responding to 'how far'

Support - evidence in support of assertions

Level 5 22-25 marks	An accomplished answer. Answers at this level will make fully clear how two or more technologies can increase food production along with issues of acceptability and sustainability introduced. 'How far' acceptable and sustainable will be considered throughout, along with different degrees of acceptable and sustainable identified. Extensive evidence will be provided in support. The answer will be well structured and logical, and expressed in clear language.
Level 4 17-21 marks	A good answer, it may have accomplished parts, but with either over-reliance on one technology, or some lack of depth if more than one is considered, or limited consideration of 'how far'. Valid points on acceptable and sustainable made. Some good evidence will be given. A well-ordered answer with good expression.
Level 3 10-16 marks	A sound answer, but with either strong imbalance, or lack of depth on most points considered. Acceptability and sustainability understood but limited at the top of the range, more token reference to one or both towards the lower end. Consideration of 'how' far will be present, but limited, towards the upper end and token or missing towards the lower end. A little evidence will be given. Minor flaws in organisation and expression are likely.
Level 2 5-9 marks	Some starting points or valid points raised, but limited and shallow. Sustainability or acceptability may be mentioned but understanding of them is weak and simplistic. Evidence will be poorly linked to the answer. Frequent problems with structure and expression will be present.
Level 1 1-4 marks	Hardly an answer. Isolated points that could be relevant to the answer are made, but are largely up to the reader to work out. The word 'sustainability' may be included, but little understanding of it is shown. Poor or no evidence is given. The whole answer will be poorly organised and with poor expression.

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