

# Mark Scheme (Results)

Summer 2015

GCE Geography (6GE04)  
Unit 4: Geographical Research

## **Edexcel and BTEC Qualifications**

Edexcel and BTEC qualifications come from Pearson, the world's leading learning company. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information, please visit our website at [www.edexcel.com](http://www.edexcel.com).

Our website subject pages hold useful resources, support material and live feeds from our subject advisors giving you access to a portal of information. If you have any subject specific questions about this specification that require the help of a subject specialist, you may find our Ask The Expert email service helpful.

[www.edexcel.com/contactus](http://www.edexcel.com/contactus)

## **Pearson: helping people progress, everywhere**

Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at:

[www.pearson.com/uk](http://www.pearson.com/uk)

Summer 2015

Publications Code UA041609\*

All the material in this publication is copyright

© Pearson Education Ltd 2015

## **General Marking Guidance**

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

## **General Guidance on Marking**

All candidates must receive the same treatment.

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

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

## Unit 4: Geographical Research Indicative Mark schemes

See generic mark scheme as well

<b>Question Number</b>	<p><b>'The scale of tectonic disasters is largely controlled by the magnitude of the hazardous event?' Discuss.</b></p> <ul style="list-style-type: none"> <li>• Explore the physical and human factors which cause some hazards to have a more disastrous impact than others.</li> <li>• Research contrasting examples of hazardous events to examine why the impact of these events on populations varies.</li> </ul>
<b>1</b>	
<b>Indicative content to be used WITH the generic mark scheme- be prepared for different types of approach to this Question</b>	
<b>FOCUS</b>	
<p>The <b>focus</b> of this title is the extent to which the size of an event is the main determinant of its impact on people</p> <p>The <b>framework</b> chosen may be a number of contrasting geo-physical events of varying types and magnitudes – earthquakes, volcanic eruptions and tsunamis</p> <p>Better candidates will deconstruct the title focussing on how scale is evaluated and the degree to which it 'controls' the level of disaster. The 'correct' answer is that it is significant but 'largely' is probably an exaggeration.</p>	
<b>Key ideas that candidates may discuss + possible case studies/examples</b>	
<p>An indication of <b>Methodology</b> should feature: why/ what particular material was used, reputable sources like academic text books and journals such as the <i>New Scientist</i>, or academic websites like the <i>USGS</i>.</p> <p><b>Key ideas</b></p> <p>3 types of hazard: primary - volcanic and earthquake, secondary - tsunami.</p> <ul style="list-style-type: none"> <li>• challenges, being something to overcome, will include death, disability and socio-economic problems especially from high magnitude, high frequency events.</li> <li>• hazards challenge/ impact is determined by physical processes. interacting with human vulnerability (Deggs model may feature)</li> <li>• event -profiles including magnitude and frequency of hazards influence challenges/ impacts, possibly limited by response, involving knowledge, and the availability of financial and technological resources.</li> <li>• Parks' model of impact over time is relevant, Degg's and Swiss cheese might also feature.</li> </ul>	

- spatial patterns occur with most deaths in poorer areas. All areas affected will incur economic effects, but more prosperous areas will have the safety net of government and insurance funding, despite the initial challenges of the disaster (eg Japan).

Expect a range of **case studies** by scale, location and possibly over time, showing **detailed knowledge**. Locations should feature and be contrasted, most likely by economic status. Likely to include reference to 'The Big One of San Andreas', Nazca subduction zone, Ring of Fire, EARV..... Credit should be given to **topical /current** examples. Japan tsunami and Spanish earthquakes of 2011, Haiti and Chile quakes and volcanic eruption from Eyjafjallajökull 2010, Grimsvotn 2011..... May use compulsory case studies of Philippines and California from Unit 1. **Credit relevant fieldwork/primary research as evidence**, eg to Iceland, Sicily, Vesuvius.....

### **Better candidates**

- will argue that human vulnerability is needed to make the hazard into a disaster and include management as mitigating hazard impacts/challenges and may introduce a time frame into their discussion. They may introduce the differing people or players involved in this.
- will justify their focus and framework effectively, setting up criteria to test/evaluate the measurement of 'scale'.
- will address several factors that affect the scale of disasters including scale of event and factors that affect the vulnerability of a population.
- will make a distinction between immediate (primary impacts) secondary and tertiary impacts.
- distinguish between property damage and loss of life.
- develop the importance of topical, or potentially more biased sources in their **methodology** e.g. blogs and NGOs versus academic researchers, or have a comparison of sources in accuracy . They may be more vigilant, exploring reliability, and in on-going referencing e.g from USGS, Geography Review, National Geographic, New Scientist, United Nations ISDR
- will accurately use **specialist geographical/ associated terminology** such as, hazard salience , recurrence levels, secondary hazard, event profile divergent/convergent/transform margins, Benioff zone, hot-spot, hazard profile, secondary hazard, event profile, lithosphere, asthenosphere, explosivity index, quasi-natural.

### **BUT above all**

- come to a 'view' about the validity of the statement

<b>Question Number</b> 2	<b>Assess the impact of changing climate on the distribution of cold environments.</b> <ul style="list-style-type: none"> <li>• Explore the changes in the distribution of past and present cold environments and the reasons for these changes.</li> <li>• Research the varying nature of cold environments and how their distribution during the Quaternary changed and is continuing to change.</li> </ul>
<b>Indicative content plus generic mark scheme- be prepared for different types of approach to this Question</b>	
<b>FOCUS</b>	
<p><b>The focus of this title</b> is the reasons for the changes in scale and extent and type of cold environments over time and specifically, the role of climate in those changes.</p> <p>The <b>framework</b> chosen may be by past/present or types of cold environment (upland, lowland, glacial/periglacial, active/ relict), or process (climate e.g. global air circulation, long term changes, meteorological processes, perhaps anthropogenic induced climate changes altering glacial/periglacial areas)</p> <p><b>Better candidates</b> will deconstruct the title and make a proper assessment of the impact recognising how it is type of cold environment that changes as well as the extent of those types.</p>	
<b>Key ideas that candidates may discuss + possible case studies/examples</b>	
<p>An indication of <b>Methodology</b> should feature: why/ what particular material were used, reputable sources like academic text books and journals such as the <i>New Scientist</i>, or academic websites like the <i>USGS</i>.</p> <p><b>Key ideas:</b></p> <ul style="list-style-type: none"> <li>• the distribution and characteristics of particular types of cold environments depend on climatic causes of cold environments: global atmospheric circulation, polar anticyclones, influence latitude, altitude on climate, seasons, day/nights</li> <li>• long-term changes in global climate have created active and relict environments.</li> <li>• currently 'ice-house' world</li> <li>• 0.5 / 1°C drop average temps can trigger Ice Age (Milankovitch theory orbital changes), volcanic eruptions, sunspot activity, role of plate tectonics cutting off of warm ocean currents.</li> <li>• location today may affect local meteorological processes-temperature extremes, winds, nature of precipitation e.g. Antarctica versus Alps or Siberia.</li> </ul>	

- spatial-temporal relationships between glacial-periglacial environments.
- 2 million yrs for Quaternary: Pleistocene ended c 10,000yrs ago, 26 million km<sup>2</sup> since when net retreat but Antarctica still 14 million km<sup>3</sup> of ice.
- globally ice sheets and glaciers. 17 glacial cycles in Pleistocene. Most extensive advance = 18000 yrs ago in the Devensian.

Expect a range of case studies/examples likely to include active and relict cold environments: E African Highlands, Alps, Iceland, Arctic, Antarctic. For periglaciation expect as above surrounding areas –frost active areas even in Britain above 800m e.g. Cairngorm). **Credit relevant fieldwork/primary research** as evidence e.g. to Snowdonia, Iceland, Alps and topical/current examples if appropriate: for example global warming resulting in changes to/loss of glacial /periglacial landscapes.

### **Better candidates**

- will understand the relationship to processes.
- may investigate factors of location: latitude, insolation, altitude, continentality, ocean currents (albedo).
- may explore why some are glacial, and some are periglacial.
- will address time at more than one scale distinguishing between long-term and short term changes.
- may discuss feedback mechanisms.
- will develop the importance of topical and potentially biased sources in their methodology comparing sources in terms of their accuracy will be more vigilant in exploring the reliability of evidence, especially that surrounding anthropogenic climate change.
- will accurately use a specialist geographical/associated terminology such as relict, permafrost, albedo, coefficient of reflectivity, Milankovitch mechanism, solar constant, Pleistocene/Quaternary, Loch Lomond readvance, positive/negative feedback.

### **BUT above all**

- will make a proper assessment exploring the changing distributions of several types of cold environment.

<b>Question Number</b> <b>3</b>	<p><b>Assess the view that population growth is the most important cause of food insecurity.</b></p> <ul style="list-style-type: none"> <li>• Explore the possible demographic, environmental and other causes of food insecurity.</li> <li>• Research the patterns of food insecurity at different scales to establish why food insecurity varies from place to place.</li> </ul>
<p><b>Indicative content plus generic mark scheme- be prepared for different types of approach to this Question</b></p>	
<p><b>FOCUS</b></p>	
<p><b>The focus of this title is</b> the significance of population growth as one of the human causes in creating unequal food supplies</p> <p>The <b>framework</b> chosen may be by theory (Malthus v Boserup) or case-studies at a range of geographical scales from global to national/regional.</p> <p><b>Better candidates</b> will deconstruct the title and show a more sophisticated knowledge from the outset of the complex relationship of food supply inequalities and population. They will justify their focus and framework more effectively.</p>	
<p><b>Key ideas that candidates may discuss + possible case studies/examples</b></p>	
<p><b>An indication of Methodology</b> should feature: why/ what particular material was used, reputable sources like academic text books and journals such as the <i>Geographical Review</i>, <i>New Scientist</i>, <i>The Economist</i> or reputable websites like the FAO.</p> <p>Credit should be given to <b>topical /current examples</b> at both global and national level. Expect the debate about the biofuels- staple food debate reducing food supply and 'land grabbing' in Africa focussing on Malthusian driven search for food security by nation states. May include from dryland and desertified areas and urban areas as well as rural, and from areas with differing economic status. Expect places like N Korea, Darfur, Kenya, Australia, Mumbai, Port au Prince and less obvious ones like Detroit. Credit should be given to topical /current examples e.g., 2010 drought in Niger, transient physical factor of earthquake in Haiti overlying chronic food supply issues linked to human factors(politics, aid) and ongoing natural hazards etc.</p> <p><b>Models</b> of Malthus and Boserup should feature especially at the global level.</p> <p><b>Key ideas:</b></p> <ul style="list-style-type: none"> <li>• <b>Food security (FAO)</b>exists when people do have adequate physical, social or economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences, for an active and healthy life.</li> </ul>	



- **Food insecurity** is clearly a failure to meet the above criteria and currently 850m people are chronically hungry, up to 2bn lack food security intermittently.
- Over 50% of the world's population live in low-income, food-deficit countries that are unable to produce or import enough food to feed their people.
- **supply** refers more to production and distribution of food than **access** which is largely a function of disposable income, especially for the urban poor
- current fears that global supplies are at a low and may not match global demand by 2030 (Perfect Storm report Beddington 2009)
- food inequalities are now large scale and increasing but for a whole variety of natural-physical and human reasons that include population growth but also environmental/economic, social/political.
- inequalities have often been generated by international strategies- e.g. unfair world trade, debt repayments, inappropriate food aid.....
- supply of food may be local-national-imported- NB current land grabbing of China to feed its population by using land in other countries-currently in Africa.
- climate change (indirectly from human caused enhanced greenhouse effect) plus associated weather shocks (cyclones, droughts) may reduce both global and local 'carrying capacity'.

### **Better candidates**

- may note that global population growth rates are slowing down.
- may note that population growth rates might be a **consequence** of food insecurity rather than a cause.
- will use a balanced, wider set of case studies, and evaluate the complex role of population growth at a local/national level.
- will contrast the validity of the statement at a range of different scales.
- will be more vigilant in referencing and addressing potential for bias in sources.
- will use **accurately specialist geographical/associated terminology** such as: nutritional spectrum, desertification, degradation, salinisation, marginal food supply areas, land tenure, bottom-up, transitory and chronic food insecurity, food spike, megacity, intermediate technology
- address the theoretical divide between (neo)-Malthusian and Boserupian view of relationship between technology and food supply.
- may introduce a time frame into their discussion and the differing people or players involved

But above all

- address the question directly coming to a view about the significance of population growth at both a global and a local level

<b>Question Number</b> <b>4</b>	<b>Assess the view that globalisation always reduces cultural diversity.</b> <ul style="list-style-type: none"> <li>• Explore the impact of globalisation on cultural diversity</li> <li>• Research a range of locations with contrasting levels of cultural diversity to understand why they vary</li> </ul>
<b>Indicative content plus generic mark scheme- be prepared for different types of approach to this Question!</b>	
<b>FOCUS</b>	
<p><b>The focus of this title</b> is how much globalisation as a process influences diversity of cultures, which can be assessed at both a local and global scales.</p> <p>The <b>framework</b> chosen is likely to be: locations with contrasting levels of globalisation/cultural diversity, connected and unconnected places. Theories such as hyperglobalisers / transformationalists/ sceptics may also be used or Huxley's model of artefacts / sociofacts / mentifacts.</p> <p><b>Better candidates will deconstruct the question and</b> address the meaning of both cultural diversity and globalisation before examining whether one inevitably leads to the other?</p>	
<b>Key ideas that candidates may discuss + possible case studies/examples</b>	
<p>An indication of <b>Methodology</b> should feature: why/ what particular material was used, reputable sources like academic text books and journals such as the <i>Geography Review</i>, or reputable websites like <i>UNESCO</i>. Expect a wide variety in this option from <i>National Geographic</i>, tabloid newspapers, pressure groups.</p> <p><b>Key ideas</b></p> <ul style="list-style-type: none"> <li>• Globalisation is the increasing levels of interconnectedness of places</li> <li>• familiar measures include the KOF index – such measurements include 'cultural' elements e.g. Ikea stores, foreign movies etc.</li> <li>• globalisation is also a set of processes which include removal of restrictions of 'free' movement of goods and capital.</li> <li>• thus easier for global corporations to operate in countries including media giants (Disneyfication) and retailers (McDonaldisation).</li> <li>• growth of English as international language may undermine local languages and dialects removing cultural identity.</li> <li>• resistance to growth of global 'culture' may lead to international isolation (Iran, North Korea) – linked to strategic view of 'one' world e.g. an US vision of the future.</li> </ul>	

- many NGOs are vociferous in preserving local cultures eg Survival International and will lobby governments for change.
- governments are the key players, in their funding and strategies on cultural diversity- e.g. aim to assimilate or foster multiculturalism but have to consider their political survival.

### **Better candidates**

- will demonstrate a proper understanding of globalisation at a number of levels.
- will explore what constitutes cultural diversity and how it can be assessed.
- will recognise that a global culture is growing but might argue that the impact of global cultures may also generate different and new, hybridised cultures.
- may explore the long term/short term impact of globalisation.
- may address the power of corporate 'culture' to dominate the media landscape thus affecting the reliability of sources used.
- use more effectively **specialist geographical/associated terminology** such as globalisation, glocalisation, consumerist society, ethnoscape, artefacts, mentefacts, sociofacts, diaspora, assimilation etc.....

### **BUT above all**

- come to a view, which should be that 'always' is probably too strong but, that apart, it is generally true.

<b>Question Number</b> <b>5</b>	<p><b>'The level and type of health risk are largely explained by the level of economic development'. Discuss.</b></p> <ul style="list-style-type: none"> <li>• Explore the role of economic development and other factors on the degree of health risk.</li> <li>• Research a range of contrasting health risks in countries at different levels of economic development.</li> </ul>
------------------------------------	---

**Indicative content plus generic mark scheme- be prepared for different types of approach to this Question**

**FOCUS**

The **focus** of this title is the relationship between health risks and economic development – specifically how a population that are exposed to high health risks are unproductive.

The **framework** is likely to be a country by country analysis of health risks with links to the economic development of those countries

**Better candidates** will deconstruct the question and recognise that the relationship is very strong but discriminate between different groups within the population.

**Key ideas that candidates may discuss + possible case studies/examples**

An indication of **Methodology** should feature: why/ what particular material was used, reputable sources like academic text books and journals such as the *New Scientist* and *BMJ*, or reputable academic websites like the WHO or government sites like the NHS . **Better candidates** may be more vigilant in their methodology, exploring topicality, reliability, bias from sites like the Blacksmith Institute etc . Ongoing referencing will be stronger.

**Key ideas**

- an unhealthy population is less productive
- the history of development suggests a very strong relationship with health improving this generating increases in productivity.
- which is of no consequence in feudal/ labour intensive societies with high birth rates which replace labour at little cost.
- becomes more important as skills level develops as capital replaces labour
- relationship works in both directions as economic development in industrial and post-industrial states requires a healthier population to be more productive but also can afford to invest in better health care

Expect a range of **case studies** of countries and, perhaps, global regions showing **detailed knowledge**. Locations should be specific and identifiable and cover a range of examples at different stages of development and with contrasting levels of health risk. Sub-Saharan Africa likely to feature with focus on HIV/AIDS and malaria inhibiting development. Haiti post earthquake cholera epidemic for impact of catastrophic events on inhibiting economic development and recovery. This might be contrasted with Cuba which has exceptional health care provision but weak economic development. **Credit relevant fieldwork/primary research as evidence.**

### **Better candidates**

- may look beyond GDP per capita measures to Gini coefficients and explore variations within countries.
- may use life expectancy data as a proxy for measuring the health of a population.
- will show that there are variations within countries.
- might explore maternal and child health risks to illustrate gender and age differences.
- may use the 'inverse care law' to demonstrate that the relationship is counter-intuitive.
- use more effectively **specialist geographical/associated terminology**.

### **BUT above all**

- come to the view that high health risks do inhibit economic development for some groups but the relationship is not straightforward.

<b>Question Number 6</b>	<p><b>'Increasing levels of leisure and tourism inevitably threatens the environmental quality of rural landscapes'. Discuss.</b></p> <ul style="list-style-type: none"> <li>• Explore the challenges posed to the carrying capacity of rural areas by leisure and tourism</li> <li>• Research the positive and negative effects of the growth in leisure and tourism on rural landscapes.</li> </ul>
<p><b>Indicative content plus generic mark scheme- be prepared for different types of approach to this Question</b></p>	
<p><b>FOCUS</b></p>	
<p>The <b>focus</b> of this title is the consequence of increasing levels of tourism and leisure on rural landscapes and more specifically their environmental quality</p> <p>The <b>framework</b> chosen is likely to be by case-study showing a range of 'impacts' – both positive and negative.</p> <p><b>Better candidates</b> will deconstruct the question to identify 'increasing' and 'inevitably' as key ideas to be explored.</p>	
<p><b>Key ideas that candidates may discuss + possible case studies/examples</b></p>	
<p>An indication of <b>Methodology</b> should feature: why/ what particular material was used, reputable sources like academic text books and journals such as the <i>New Scientist</i>, or reputable academic websites like the BAS. <b>Better candidates</b> may develop the importance of topical, and perhaps more potentially more biased sources exploring reliability of blogs and NGOs versus academic researchers, or have a comparison of sources in accuracy and be better in <b>ongoing referencing</b> e.g from <i>Geofiles, Geography Review, National Geographic.....</i></p> <p><b>Key ideas</b></p> <ul style="list-style-type: none"> <li>• different types of leisure and tourism (active or passive) may produce different impacts/threats i.e. different footprints.</li> <li>• the carrying capacity of rural areas varies – their fragility is a consequence of both physical.</li> <li>• not all impacts are negative.</li> <li>• leisure and tourism has grown and is closely related to levels of economic development.</li> <li>• different management approaches can help conserve rural landscapes to make them sustainable</li> </ul>	

Expect a range of **case studies**. Popular choices are likely to be Antarctica, Machu Picchu, Galapagos, various UK national parks and country parks, golf courses, Olympic winter sports sites.

**Credit local research and other fieldwork as evidence**, which may have been carried out if Unit 2 Rebranding chosen. Likely to be in a Nature Reserve, National or Country Park

### **Better candidates**

- will explore the idea of carrying capacity and how it varies from one rural landscape to another.
- will differentiate between leisure and tourism.
- will offer details and data to support the idea of growth
- will explore differences of impact of different types of leisure and tourist activity.
- may explore how fragility varies and that some landscapes have much lower carrying capacities as a consequence.
- may explore a range of different environments rather than simply treating the rural environment as if it has no internal variety.
- may explore the consequences of exceeding carrying capacity in terms of sustainability.
- use accurately **specialist geographical/ associated terminology** such as post-productive landscape, fragility, valorisation, hot spot, carrying capacity, pleasure periphery, resilience, , stewardship, ecotourism, top down, bottom up, leakage.....

### **BUT above all**

- will recognise that growing numbers will inevitably cause problems in the end – growth cannot be unlimited.





