edexcel

Mark Scheme (Results)

January 2012

GCE Geography (6GE04) Paper 01
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 call our GCE line on 0844 576 0025, our GCSE team on 0844 576 0027, or visit our qualifications website at www.edexcel.com. For information about our BTEC qualifications, please call 0844 576 0026, or visit our website at www.btec.co.uk.

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.

Ask The Expert can be accessed online at the following link:

http://www.edexcel.com/Aboutus/contact-us/

Alternatively, you can speak directly to a subject specialist at Pearson about Edexcel qualifications. Our dedicated Geography subject adviser Jonathan Wolton will be able to help you on 020 7190 4165.

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 raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

January 2012
Publications Code UA030497

Question Number 1	**The number of tectonic hazards is not increasing but their impact has become more disastrous. Discuss** • **Explore** the range of factors that make tectonic activity increasingly hazardous to humans and how the impact of disasters varies over time • **Research** a range of social and economic impacts, resulting from seismic and volcanic hazards in contrasting locations and how these may have varied over time.
Be prepared for different types of approach to this Question	
FOCUS:	**The focus of this title** is the impacts of hazards and changes over time i.e. trends. The **framework** chosen may be by for example • type of tectonic hazard,- seismic/volcanic • type of impact,(economic, social, political, environmental); • increasing vulnerability associated with population increase, poverty, urbanisation • time scale • possibly by economic status (MEDC, NIC, LEDC). **Better candidates** will justify their focus and framework more effectively.
Key ideas / concepts which 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 Geography Review, the New Scientist, or reputable websites like the USGS. **Better candidates** may develop the importance of topical, unbiased sources e.g. scientific/academic researchers e.g. USGS versus blogs and NGOs or have a comparison of sources in accuracy. **Case studies/examples likely to feature**: older examples like Kobe and Pinatubo useful here, as are all the newer examples: New Zealand, Haiti, Chile, Eyjafjallajökull, Japanese and Indian Ocean tsunamis. Credit relevant **fieldwork/primary research** e.g. to Iceland, Sicily, Vesuvius and topical examples if relevant. • **Models** may feature, e.g. Degg, Parks, hazard event profiles Range of hazards from • Volcanic activity: lava, pyroclastics, ash, gases, lahars…. • Seismic: earthquakes: ground shaking, displacement, liquefaction, tsunamis. **Key ideas:** • A tectonic event is a physical occurrence resulting from the movement /deformation of earth's crust. They become hazards when have potential to cause loss life/property damage. Disasters are the realisation of this hazard. ISDR: 'A disaster is a function of the risk process. It results from the combination of hazards, conditions of vulnerability and insufficient capacity or measures to reduce the potential negative consequences of risk'. For a disaster to be entered into the EM-DAT database need at least one of: 10 or more people reported killed / 100 people reported affected /Declaration of a state of emergency / Call for international assistance**.**

Impacts physical, economic political and social impacts: direct (e.g. damage to infrastructure, crops, housing) and indirect (e.g. loss of revenues, unemployment, market destabilisation) consequences on the local economy.

- Should be a focus on negative impacts- social + economic - property and lives and Quality of Life. However, could argue less severe impacts can actually be positive- e.g. encouraging people to live in hazardous zone e.g. Iceland, Sicily, Hawaii.
- Occupancy in hazardous areas is due to lack of knowledge, choice and inertia
- Scale of impact/severity varies from local-regional-national-global
- Impacts are related to type of hazard, its event profile including magnitude, frequency. However, not all tectonic events are hazardous: physical factors of deep earthquakes, low magnitude events, most intrusive activity. The causes of hazards are relevant here: plate boundaries and intra-plate activity differ with subduction often producing more violent volcanic activity. However, the less explosive spreading ridge constructive boundary under Iceland caused Eyjafjallajökull, with long running economic effects. Changes in subduction zone activity over time may feature , e.g. Mt Merapi (effusive changed to explosive)
- Impacts are linked to levels of socio-economic development NB MEDC-RIC-NIC-LEDC-LDC spectrum.
- Effective management/response may reduce impacts- aseismic buildings, warning systems, high and low tech.
- Anomalies – (high economic development but high impact) e.g. Kobe Icelandic volcano Eyjafjallajokull 2010 or (low economic development but low impact) e.g. Pinatubo, future tsunamis in Pacific because of new warning system.
- Frequency: EM-DAT: numbers, disasters increasing (increased vulnerability rather than event) as is their economic effects. Numbers dying is decreasing (prediction, mitigation.

May get discussion of :

- **Secondary hazard** of earthquake: tsunami / volcanic eruptions-lahars, floods, jokulhaup,
- **Tertiary effects**- e.g. crop failure, aircraft disruption, disease e.g. Haiti.

	Credit those who go beyond simplistic viewpoint that all tectonic activity is hazardous to the same extent i.e. uniform severity, or it is all human factors or all physical; depends on examples chosen. **Better candidates may** • Weigh up the relative importance of their case studies more effectively. • Weigh up the hazard trends versus the disasters part of the question. • Be more vigilant in referencing e.g. EM-DAT, USGS and United Nations IDDR, Geography Review, National Geographic, New Scientist. • Use accurately specialist geographical terminology e.g. hazard profile, subduction zone, Benioff Zone, explosivity index, liquefaction, secondary hazard, asthenosphere, quasi-natural.

Question Number 2	**Explain why glacial and periglacial processes produced a range of landscapes within a region such as the British Isles.** • **Explore** the processes which shaped the landscape during the Pleistocene within a region such as the British Isles • **Research** the wide variety of landscapes and landforms created at different scales by glacial and periglacial processes within a chosen region.
Be prepared for different types of approach to this Question	
FOCUS:	**The focus of this title is** detailed analysis of **one region** - British Isles or another-Alps, Iceland. The **framework** chosen may be by: • scale of feature • upland/lowland • erosion-depositional • Glacial / periglacial. **Better candidates** will justify their focus and framework more effectively and debate the role of glaciations and periglaciation. They will have a wider /more detailed range of examples as evidence.
Key ideas /concepts which 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 Geographical Review, New Scientist, or reputable websites like the BAS. **Better candidates** may develop the importance of topical, unbiased sources e.g. scientific/academic researchers e.g. BAS versus blogs and NGOs or have a comparison of sources in accuracy **Case studies/examples likely to feature:** The British Isles. Credit relevant fieldwork/primary research e.g. to Dartmoor, Snowdonia, or if fieldwork in another region e.g. Alps/Iceland and topical examples if appropriate: for example global warming resulting in changes to/loss of periglacial landscapes. **Key ideas** Expect coverage of Britain/UK, but some candidates may have researched Eire /Alps /Iceland. Pleistocene= epoch forming the earlier half of the Quaternary Period, beginning c.2 million years ago, ending c.10,000 years ago.

	There should be coverage of glacial and periglacial. (Some may include fluvio-glacial) including **some** of following: • Glacial processes: abrasion, plucking, nivation, frost weathering, dilatation… • Landforms may be large scale to medium and small scale : • Upland- U shaped valleys, over-deepened basins-lakes, aretes, cirques, trimline smallest scale- striations. Rounded mountains if icesheet erosion, Knock & Lochan erosional, Nunatak effect if project-periglacial processes • Lowland: till sheets, flutes, drumlins, moraine ridges cross upland-lowland division. • Fluvio-glacial includes overflow channels, outwash plains, ,kames, eskers, varves, kettle holes • Many areas affected by repeated cycles of glaciation (and periglaciation), masking features • NB role of post glacial weathering and erosion masking/altering features • Only the North of London-Bristol line for glaciations, fluvio –glacial outwash features further south as well • Credit concept of equifinality e.g. on outwash plains • Periglaciation still active in UK e.g. Cairngorms. • Periglacial processes (erosion-transportation-deposition-thermokarst: frost heave, melt-waters, frost shattering) produced generally less spectacular landforms than glaciers/icesheets although still may be classed as 'distinctive'. These include upland tors, patterned ground, screes and in lowland areas micro ice wedge features • Repeated ice advances and retreats mean many distinctive features have been masked/modified by glaciation and fluvio-glacial processes. • Since then fluvial and marine processes and weathering and erosion generally have modified/masked landforms, e.g. filling in valleys, creation of lakes, erosion of depositional forms especially at coastlines. **Better candidates:** • May debate the term range more effectively. • Be more vigilant in referencing and relate landforms to landscapes. • Use accurately specialist geographical/ associated terminology such as glacial, cirque, tarn, roche moutonnée, arête, trim line, striation, overflow channel. Equifinality, thermokarst, tundra, patterned ground, solifluction, head deposits, talus, terraces and lobes, ploughing boulders, blockfields, gelifluction, cryoturbation. • May consider the role of geology, or other factors such as the poly-cyclic nature of glaciations. **Note:** candidates who concentrate on landforms not landscape are likely to be in the 9-12 Level for application.

Question Number 3	**Evaluate the importance of developing sustainable strategies to manage food security.** • **Explore** the need for, and effectiveness of, different strategies that are designed to improve food security. • **Research** a range of food security strategies, including 'sustainable ones', at differing scales and locations.
Be prepared for different types of approach to this Question	
FOCUS	**The focus of this title** is differing strategies for improving food security, especially if classed as more sustainable The **framework** chosen may be by: • scale of insecurity • location: urban/rural and differing economic status • scale of strategy • players involved • bottom up/top down • type of economic development • scale of contribution • possibly over time. Focus could be land-based agriculture, aquaculture or wild food (fishing/hunting). **Better candidates** will justify their focus and framework more effectively, and debate the 'importance aspect' (i.e. for whom or at what scale)
Key ideas /concepts which 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 Geographical Review, New Scientist, Economist or reputable websites like the FAO. **Better candidates** may develop the importance of topical, unbiased sources e.g. scientific/academic researchers e.g. UNEP versus blogs and NGOs or have a comparison of sources in accuracy. Credit should be given to topical /current examples. Expect country specific ones e.g. UK to sub Saharan African countries/regions, Cuba, Brazil to Australia etc to more global/international scale strategies e.g. role of Fair trade, organic farming, aquaculture, LEAF projects, urban farming. May also consider GM, Green Revolution, the C.A.P.

	Key ideas: • **Food security (**FAO) exists when people have adequate physical, social or economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. 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. Land grabbing issues reducing land used for local agriculture and food supply in e.g. Tanzania but improving source countries e.g. China may feature A sustainable strategy (may use quadrant, stool structure etc) may mean: • Futurity - although it may need adapting • Meets needs of present generation • Pro-poor, equitable, community involvement facets • Strategies may be at a local, individual- regional-national-international scale • Sustainability should mean a more cost effective outcome in the long run • It should meet the needs of the environment, society and economy, although many current strategies tackle only one or a few aspects of food security- e.g. environmental degradation, or water, or just trade Food security in one area of world may help/make other areas less secure- NB pros/cons food miles. Climate changes and food spikes making sustainable strategies more important but also more difficult to achieve- e.g. recent food spike is making many countries more protectionist and trade is essential for millions of poorer farmers to achieve food security themselves. Sustainability in food security is quoted at all levels and by many players: UN World Food Programme, UK Food 2030 policy, Fairtrade organisation, SUSTAIN, local authorities down to individuals **Better candidates**: • May go beyond simplistic viewpoint that all strategies need to be sustainable- e.g. food pushes/extra aid needed in emergencies e.g. natural and humanitarian disasters--depending on case studies chosen. • They will use accurately specialist geographical/ associated terminology such as, nutritional spectrum, marginal food supply areas, land tenure, bottom up, transitory and chronic food insecurity, food spike, megacity, intermediate technology. • Should focus on food security (access and availability) rather than simply supply.

Question Number 4	**Assess the extent to which cultures need to change in order to survive.** • **Explore** how far cultures need to change and adapt when threatened by a range of environmental, socio-economic and political pressures. • **Research** a range of human cultures showing different rates of change degrees of cultural evolution and survival.
Be prepared for different types of approach to this Question	
FOCUS:	**The focus of this title** is the survival of culture- although the very nature of culture is to change • **Culture**= a system of shared values by a society which then influences life styles and creates boundaries for behaviours and interactions with others. • **Change** =evolving, becoming more distinct or more globalised, homogenous/ heterogeneous The **framework** chosen may be: • Location • Time scale (speed of change i.e. rapid might be harmful), • Type of culture/ cultural landscape, • Type/strength of threat, economic development, level of vulnerability • Reason: role of globalisation, government, TNC. • Also by pressure e.g. economic, environmental, political. **Better candidates** justify their focus and framework more effectively.
Key ideas /concepts which 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 Geographical Review, New Scientist, Economist or reputable websites like UNESCO. **Better candidates** may develop the importance of topical, unbiased sources e.g. scientific/academic researchers e.g. university led versus blogs and NGOs such as Survival International or have a comparison of sources in accuracy Credit should be given to topical /current examples.

	Key ideas. • Culture is immensely varied, and includes people in rural and urban settings • Culture is not fixed / rigid but evolves with inputs: new people/ideas/ technology advances. Local culture may hybridise / customise cultural globalisation- glocalisation. • Culture is passed on from generation to generation .It evolves naturally over time, particularly with increased contacts with other groups and beliefs- although individuals may perceive that their culture has not changed • Newcomers to an area, whether from inside a country or as immigrants, will either adopt resistance or assimilation. Even third generation immigrants may retain some of their original culture. • This is a two way process where the core culture will also be changed, as shown in food tastes, religion and sometimes clothes. • It evolves naturally over time, particularly with increased contacts with other groups and beliefs- especially in world cities • External influences, e.g. from another culture: in migrants and immigrants will either adopt or resist; also environmental change e.g. global warming. • Faster increase in change with technology of 20^{th}-21^{st} C (air, internet, rising disposable income with rising middle classes) 'shrinking world ' • Cultural globalisation - differential effects. Some areas reject local culture and embrace a global culture by default, such as many world cities from London to Shanghai, with cappuccino culture ,Americanisation / MacDonaldisation. Globalisation as a process is affecting the diversity of culture and landscape, from local to global scales • Credit should be given to topical /current examples, e.g. latest form of spread of culture via globalisation from rising superpowers: e.g. China land grabbing and influence e.g. Chittagong, Kenya, China town in London or San Francisco - NB not all necessarily negative? May venture into the politics and change in culture unfolding in N Africa and Middle East-role of facebook, twitter. • Also credit those who quote / use their own fieldwork. • May get case studies of Amish, Mennonites, Islamic culture • Contemporary policies e.g. multiculturalism in UK may feature; policy towards forced marriage. Credit those who go beyond simplistic viewpoint that all culture changes to survive /or is fossilised or that everything is getting MacDonaldised. **Better candidates** may use accurately specialist geographical / associated terminology such as, globalisation, glocalisation, Bollywood, financescape, imperialism, hyperglobalisers, sub culture, externalities. They may be more vigilant in referencing e.g. Geography Review, National Geographic.

Question Number 5	**Health risks from pollution have changed location and increased over time. Discuss.** • **Explore** the relative health risks from incidental and sustained pollution, and how and why these vary both spatially and over time. • **Research** locations at varying scales and levels of development, experiencing health risks, both past and present, from different types of pollution
Be prepared for different types of approach to this Question	
FOCUS:	**The focus of this title** is the role of geographical features increasing or aggravating health risks The **framework** chosen may be by for example: • Location • Development status • Time • Type of pollution • Longevity/severity of health risk. **Better candidates** will justify their focus and framework more effectively and may use the epidemiological model, economic development, chronic or short term risk, physical-human features.
Key ideas /concepts which 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 Geographical Review, New Scientist, Economist or reputable websites like the WHO **Better candidates** may develop the importance of topical, unbiased sources e.g. scientific/academic researchers e.g. BMA versus blogs and NGOs or have a comparison of sources in accuracy. Credit should be given to topical /current examples.

Key ideas

- Expect coverage of Fukushima Japan, Chernobyl, Bhopal, Harbin, climate change, Grime Belt of China, UK air, Blueskies areas , ozone depletion and melanoma .Better candidates will be up to date with any older case study could argue places as varied as UK or Ethiopia have not changed much recently whereas China or Beijing have.
- vast array /range of health risks, some more toxic/persistent or longer term than others
- Management by local-national-international organisations in prevention or treating symptoms may reduce/eradicate health risks
- pollution fatigue may feature(public pressure to manage)
- Lifestyle choices are critical as well as pollution control
- Some infectious diseases have no real link with pollution e.g. measles, HIV/AIDs although a polluted environment will add stress to health
- Some pollution so trans-boundary global health risks- hence international efforts to control- e.g. ozone depletion.
- In more developed economies land and water pollution related risks have declined whereas air pollution has altered – asthma
- Respiratory and waterborne diseases like cholera are directly linked to pollution. Indirect effects from pollution- climate change-heat shocks- e.g. 2003 France
- Global shift in pollution as manufacturing has shifted to NICs and LEDCs from MEDCs
- Not just rural areas with largest pollution footprint- NB cancer villages in China
- Anomalies e.g. some transition /BRIC economies with isolated lower pollution areas e.g. Curitiba or Dongtan or Cyberjaya / Putrajaya
- Models may feature: Kuznet environmental curve and the Environmental risk transition model

Credit should be given to topical /current examples as well as more historical ones, especially a balance of current and historical that relate to the idea of 'over time'.
Credit those who go beyond simplistic viewpoint that pollution has uniformly changed or hasn't changed
Source type/s of references used should feature.

Better candidates:

- May be more vigilant in ongoing referencing and use accurately specialist geographical / associated terminology such as chronic, epidemiology, health risk, health shock, prevalence, diffusion, source, sink, Kuznet. Source, sink, sustained, incidental, DALYs.
- Consider changing location and increasing over time.
- Will debate whether they have increased / decreased over time, and / or the locations have changed.

Question Number 6	**Assess the extent to which players have contrasting attitudes about the use of rural areas for leisure and tourism** • **Explore** the range of people and organisations involved with leisure and tourism in rural areas, and the reasons for the differing values and attitudes they may hold. • **Research** a range of rural areas used for leisure and tourism to demonstrate the contrasting views and opinions of players involved
Be prepared for different types of approach to this Question	
FOCUS:	**The focus of this title** is way in which rural landscapes may be audited as to their intrinsic importance for landscape, ecology, culture etc and their resilience to use by leisure and tourism. The **framework** chosen may be by: • type of attitude (preservation—exploitation spectrum) • type of rural area • type of leisure/tourism or location ,player, economic status or length of development i.e. time aspect • model e.g. Butler, carrying capacity, pleasure periphery. **Better candidates** justify their focus and framework more effectively and go into more depth on criteria.
Key ideas /concepts which 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 Geographical Review, New Scientist, Economist or reputable websites like UNESCO or a National Park Authority. **Better candidates** may develop the importance of topical, unbiased sources e.g. scientific/academic researchers e.g. British Antarctic Survey, UN versus blogs and NGOs and TNCs or have a comparison of sources in accuracy Credit should be given to topical /current examples.

	Key ideas Locations should feature and be contrasted, from urban fringe to deep wilderness: country parks and paintball farms to Macchu Piccu and Antarctica. • Rise in leisure and tourism demands globally mean more players and locations involved. • Players include individuals, residents, visitors, businesses, governments, conservationists. • Different types of leisure and tourism (active or passive) may produce different demands. Impacts and hence values/attitudes may vary • A conflict matrix may be used • Different players put different values on conserving, preserving, exploiting rural areas, and hence different attitudes/values • Some players may have similar views. attitudes- e.g. conservationists and locals if leisure/tourism not welcomed • TNCs and businesses may differ from conservationists/locals because they are profit driven • Pressure groups/ NGOs may conflict with businesses/ local authorities/national government • Over time attitude/ values may alter NB Doxey's model applied e.g. to a National Park honeypot / urban fringe area—NIMBY attitude? • Preservation and conservation are used by wealthier countries or those with space to allow land to be restricted from leisure and tourism., although increasingly been seen as a type of environmental status symbol by transition economies(e.g. China, Wolong National Park) • Increasing international players, from TNCs to conservation: e.g. WWF , UNESCO Management, if effective, may reconcile differing attitudes. Both leisure and tourism activities should be covered. Credit should be given to **topical /current examples** e.g. New National Parks like in the UK (the South Downs) or in Russia (2010-2020).UNESCO sites like the Lake District and The Jurassic Coastline would also be relevant. Credit those who go beyond simplistic viewpoint that all players differ in attitude. **Better candidates** may assess the strength of any contrasting attitude and link with values. They will use more confidently ongoing referencing and accurate use specialist geographical /associated terminology such as carrying capacity, pleasure periphery.

Further copies of this publication are available from
Edexcel Publications, Adamsway, Mansfield, Notts, NG18 4FN

Telephone 01623 467467
Fax 01623 450481
Email publication.orders@edexcel.com
Order Code UA030497 January 2012

For more information on Edexcel qualifications, please visit
www.edexcel.com/quals

Pearson Education Limited. Registered company number 872828
with its registered office at Edinburgh Gate, Harlow, Essex CM20 2JE

Ofqual

Llywodraeth Cynulliad Cymru
Welsh Assembly Government

Rewarding Learning