GradeMax



Mark Scheme (Results)

January 2101

Pearson Edexcel International A Level

In Geography (WGE04)

Paper 4: Geographical Research

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General Marking Guidance

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

Question 1 – 'It is likely that both the frequency and magnitude of tectonic disasters will increase in the future'. Discuss.

- Research the trends in the frequency and magnitude of tectonic hazards.
- Research a range of disasters to examine trends, over time, to examine trends in their short-term and long-term impacts.

Indicative content

The focus of this title is the assertion that the frequency and magnitude of tectonic disasters will increase.

The framework chosen maybe by the following.

. Type of tectonic disaster and/or hazard – one section on earthquakes of varying magnitudes, one on volcanic eruptions and one on tsunami.
. Scale of disaster – case-study led material using various measurements of disaster impact including death/injury toll and property losses mapped against measurements of scale of disaster and the impact on people and property.
. Developed/developing world contrasts to illustrate the different 'successes' in managing hazards using concepts of variations in governance to explain variations in impacts and suggesting future trends.

Key analytical points

- There is limited and controversial evidence about long-term physical processes changing through human actions (anthropocene material) to increase the frequency of tectonic hazards which, in turn, may impact on their magnitude.
- Less controversially there is plenty of evidence of human induced earthquakes through dam building, mining and, most recently, 'fracking' which might be cited.
- A study published in the journal *Seismological Research Letters* identified 730 sites where human activity caused earthquakes over the past 150 years.
- Human activity has induced earthquakes with magnitudes as high as 7.9—and that the number of earthquakes is clearly rising in some regions of the world.
- 'Magnitude' also needs careful deconstruction – many will separate impacts on people through death and injury and impacts on property as measured by both insured losses and economic losses.
- The key arguments to be explored revolve around the demographic and socio-economic factors that control vulnerability - here the evidence from natural hazards in general is compelling but less clearly so for tectonic disasters alone.
- Both economic growth and increasing population will *de facto* raise higher economic losses unless, of course, these are compensated for by improved management.
- Issues here, will include the success/failure of management and the challenges that brings

In summary
There is more evidence to support the contention in the question than reject it especially over frequency.
Differentiation will probably be achieved through the quality for the socio-economic data presented and the clarity of the distinction between magnitude and frequency

Case studies used are likely to include:

. Montserrat
. Iceland – Eyjafjallajökull
. Mount St. Helens
. Great Sichuan earthquake 2008
. Loma Prieta/San Francisco
. Asian, Japanese and Chilean tsunami events.

Question 2 – Evaluate the view that strategies, such as the Green Revolution and genetic modification have done at least as much harm as good to global food security.

- Research the varied causes of food insecurity in both the developed and the developing world.
- Research a range of locations to examine the effectiveness of different management strategies in addressing food security.

Indicative content

The focus of this title is the view that hi-tech solutions to food security have generated as many problems as they have provided solutions.

The framework chosen may be by the following.

. Different causes of food insecurity across a range of countries at different stages of development including the green revolution and genetic modification
. An approach that covers the question from case-study location to case-study location – perhaps comparing south-Asia with Africa

Key analytical points

- A key issue to be resolved here is what constitutes 'more harm than good' and how this would be measured.
- This might include references to inequalities both globally and nationally.
- Widespread benefits of the Green Revolution have been acknowledged as increased yields, especially in rice and wheat but much less so in other crops, especially African staples. Statistics suggest that the production of maize, wheat and rice almost doubled between the 60s and 90s.
- However, the seeds are expensive as are the other vital inputs of pesticides and fertilisers leading to rural indebtedness and increasing concentration of land in the hands of landlords.
- Soil fertility has reduced and there are serious questions about biodiversity because of pesticide usage calling into question the long-term sustainability of the dependence on HYV.
- Genetic modification of crops also has compelling evidence of (short-term) yield increases – although this is not so evident in the developing world.
- The big 'winners' of the development of GM crops has been US large scale corporate agribusinesses and the seed companies themselves.
- Genetic modification is controversial on many levels not least its impact on bio-diversity'
- However there have been serious implications of developments such 'suicide' genes specifically designed to disallow seed saving.

- For both technological solutions food supply has been increased but so too inequalities which challenges the idea that food security has been improved, at least not consistently.

In summary

This remains controversial so any conclusion can be plausibly argued

Differentiation will come from the level of detail and the retention of the distinction between food supply and food security.

Case studies are likely to include:

. South-Asia use of HYV's
. The African experience(s) of Green Revolution
. US agribusinesses

Question 3 – Evaluate the view that tourism poses the most significant threat to cultural diversity and landscapes.

- Research the reasons why cultural diversity varies from place to place, at a range of scales.
- Research a range of locations to explore how different players and processes including the growth of global media, tourism and TNC's impact on cultural diversity.

Indicative content

The focus of this title is whether or not tourism is the most significant threat to cultural diversity

The framework chosen may be by the following.

. Many will take a theoretical approach – hyperglobalisers both positive and negative, sceptics, transformationalists.
. Case studies of different societies/places with contrasting levels of tourism and cultural diversity.

Key analytical points

- 'Cultural diversity' is frequently advertised both locally and nationally as an attraction for tourists from Chinatown to encounters with 'traditional' peoples in diverse global locations.
- Nonetheless, the impact is obviously transformative with 'culture' being sold as part of a tourist package.
- Tourists also bring their own demands which in smaller economies, e.g. Caribbean islands may require local cultures to adapt or risk losing that tourist trade. Access to beaches, food and music might all change under that pressure.
- In some global hub cities with high levels of flux in the population, e.g. London, Singapore there is, arguably, the development of a 'global' culture at least in skeletal form blurring the boundaries between previously culturally distinctive communities to create more cultural diversity and not less. So, not a threat at all.
- Tourism is just one element of globalisation and attention also needs to be paid to other pressures.
- Americanisation and its variants (westernisation and McDonaldisation) have had, and continue to have, a profound impact on cultural diversity even in societies not heavily impacted by tourism and/or migration e.g West Africa.
- The same is true of other TNC engagement from large mining corporations displacing indigenous peoples and so altering the natural environment to threaten the viability of indigenous communities.

In summary

- Tourism is one part of a cats-cradle of impacts, most of them damaging to cultural diversity.
- Differentiation will come from the recognition that there will be winners and losers from contact, but for fragile communities of minority peoples the history is not a happy one.

Case studies used are likely to include:

. Indigenous groups in various American and Australian locations
. Caribbean 'culture' in tourist destinations
. London/Singapore
. TNC activity in Canada/Ecuador

Question 4 – 'Intermediate technology and low-tech solutions are the most successful ways of reducing health risk'. Discuss.

- Research the varied methods of reducing health risk including global programmes, intermediate technology and low-tech solutions.
- Research a range of locations at different levels of development to investigate the success of the methods used to reduce health risks.

Indicative content

The focus of this title is the efficacy of intermediate technology and low-tech solutions as opposed to global programmes.

The framework chosen may be by the following.

. Comparisons of different techniques covering examples form all three approaches indicated in the first research prompt.
. Comparison of states in various stages of economic development and/or a timeline for one state as it has developed
. Different causes of health risk including environmental factors (including air and water pollution) socio-economic status, poverty and geographic factors such as climate to better evaluate what constitutes the 'most important ways'.

Key analytical points

- In low-income countries a number of relatively cheap and certainly low-tech solutions would have an enormous impact on mortality rates.
- These would include the provision of fresh/clean drinking water and better sanitation – both low-tech solutions. The impact of major health risks such as diarrhoea is largely determined by poverty and limited access to basics.
- Improved primary health care, especially in rural areas, would help diagnosis and improve mortality rates at relatively low-cost – cloth filters against chiolera and mosquito nets to reduce malaria have proved effective.
- However in many developing countries health spending is controlled by an urban elite revolving around very highly trained medical professionals who want to import high-technology into urban hospitals.
- A similar inverse care-law also pertains in the developed world were local and intermediate interventions are often neglected, not least the treatment of pollution related disease in deprived areas.
- Preventative health care addressing exogenous causes of health risk including diet, alcohol abuse and smoking are often underfunded.
- However global programmes would be necessary to wipe out the historically large pandemics – however Big Pharma is not always as preoccupied with the development of the appropriate drugs as it is developing different markets
- Health risk can be expressed in two dimensions – geographic extent and threat to individuals which needs identifying to address how to assess 'most successful'.

In summary

- There is clearly a central role for low/intermediate-tech, cheap and locally managed solutions to many of the world's greatest killers; not least water related diseases.
- Differentiation will come from the quality of the detail and the willingness to provide a methodology for assessing 'most important ways'

Case studies used are likely to include:

. Global pandemics and their treatment from Ebola to Malaria, Polio Smallpox
. Local/National management of health risks drawn both developed world e.g. pollution reduction in Chinese cities or rural medical care in Cuba

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