



# Mark Scheme (Results)

January 2023

Pearson Edexcel International Advanced Level  
In Geography (WGE04)  
Unit 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 – Evaluate the view that ‘modifying the event’ is the most successful method of managing tectonic hazards.’ Discuss.

- Research the contrasting ways in which tectonic hazards can be managed.
- Research a range of contrasting tectonic disasters to examine their management.

#### Indicative Content

**The focus** of this title is the management of tectonic hazards and how different types of management may be more or less effective.

**The framework** chosen may be one or more of the following.

1. Different types of management broadly divided into mitigation and adaptation policies at various scales – the Park model might be used and ‘event management’ will feature under ‘mitigation’. Candidates may divide this into pre-planning and disaster response.
2. Magnitude of the disaster hazard – case-study led material using various measurements of impact from GDP losses, insurance losses through to death toll.
3. Type of tectonic hazard – there are three main types – earthquakes, volcanoes and (secondary) tsunami – this approach would probably be case-study led.

#### Key analytical points may include:

- A clear understanding of the distinction between hazards and disasters is an essential pre-requisite of a good report. It is also important that candidates recognise that the magnitude of an event will clearly have a profound effect on the ‘success’ of management strategies.
- The unpredictability of tectonic hazards makes them inherently hard to manage – for earthquakes (and tsunami) both their location and magnitude are problematic. Volcanic eruptions are easier to ‘fix’ locationally but magnitude and timing are much more difficult.
- Management by event modification should include case-study or generic explanations of land-use zoning, hazard resistant building design, defences e.g. tsunami walls. Adaptation in order to reduce vulnerability might include monitoring, warning systems, evacuation policies and community resilience.
- Some might point out that mitigation of the hazard itself is very limited – there is no technology to reduce the energy of earthquakes or control the scale of volcanic eruptions.
- The ‘most important’ management technique is highly dependent on the type and particularly the magnitude of event. Some may use the Mt St Helens story to illustrate how the unpredictability of tectonic events can impact on the event management as the lateral blast was not predicted. Others will use the

Tohuko quake to show how the magnitude of an event can be overwhelming.  
Haiti will often appear to illustrate poor governance and poor building design.

**In summary**

- Event modification is important but not exclusively so and, in some cases, only of marginal significance.

**Case studies used are likely to include:**

1. Mt St Helens
2. Tohuko and tsunami
3. Haiti and Chile
4. Iceland – Eyjafjallajökull
5. Hawaii

Question 2 - Evaluate the view that intermediate and low-tech strategies to increase food supplies are always more successful than high-tech strategies.

- Research the varied strategies to increase the food supply at both global and national scales.
- Research a range of contrasting uses of different types technology that attempt to increase food supply.

#### Indicative Content

**The focus** of this title is the relative importance of technology and science in addressing issues of both overall food supply and food security.

**The framework** chosen may be by the following.

- A 'case-study' approach by type of technology and science including plant breeding and GM, low-tech irrigation methods, intermediate technology (especially in drylands) and high-tech, such as drop irrigation.
- A case-study approach using either scale, local, national and global and/or levels of development – this might be wrapped up with the role of different players from TNCs through to governments and NGOs

**Key analytical points may include:**

- Candidates should differentiate between food supply and food security.
- Plant hybridisation significantly increased yields, especially of rice and corn but the Green Revolution is also widely critiqued for its social impacts with significant benefits for a minority of farmers but costs for their poorer neighbours who could not/cannot afford the necessary technology and materials.
- Similar criticisms have been directed at GM not least the 'suicide gene' increasing dependency of farmers on large TNCs. Increasing yields in many developed countries have not been matched by similar advances elsewhere, not least in sub-Saharan African states.
- Other high-tech breakthroughs such as centre-pivot irrigation and better pump technology have led to landscape changes in much of the US mid-west and in other dryland regions with significant aquifers. This has increased food supply but the impact on food security is much more debateable as much of the harvest is used as cattle-feed and/or the production of ethanol.

- Low-tech and intermediate technology solutions increase food security for many in drylands especially subsistent farmers but climate changes can threaten these gains.
- Land acquisition by TNCs and governments can also increase food supply and security for one country whilst reducing it for the 'host' state.

**In summary:**

- Almost all technical changes increase crop yields and food supply, at least in the short term – however the impact on food security is much less obvious as there are clearly many losers

**Case studies are likely to include:**

- Green Revolution IRRI – Indonesia
- Indian farming crisis
- GMs, irrigation and the Ogallala
- Ethiopian land grabs
- Deforestation in Amazonia

Question 3 – ‘Global media corporations pose the most serious threat to the survival of indigenous cultures.’ Discuss.

- Research the varied impacts of globalisation on indigenous cultures.
- Research a range of locations to examine the impact of different players and processes that promote globalisation.

#### Indicative Content

**The focus** of this title is how the different players that promote one version of another of ‘globalised’ culture threaten the norms, values and belief systems of ‘traditional’ cultures. In particular is it largely a media driven impact?

**The framework** chosen may be by the following.

1. Structured by the various players, media corporations especially TV, Netflix, Twitter, Snapchat etc, other corporations in the service and manufacturing sectors – in other words McDonaldisation and westernisation.
2. Levels of cultural diversity – a case study led account according to level of development and/or urban/rural contrasts within countries.
3. Some might take a theoretical approach – hyperglobalisers both positive and negative, sceptics, transformationalists.

#### Key analytical points

- The concept of ‘Traditional cultures’ needs to be deconstructed as does the apparatus for assessing how one evaluates ‘most serious threat’.
- TNCs and their brands will be mentioned by many introducing different products from foods to clothing and service products. However many of these goods and services will penetrate these markets via the sue of the media for advertising and exposure.
- Other candidates for posing serious threats are the dominant elite within a country – attitudes in Myanmar to the Rohingya or in Australia to aboriginals communities. This might also include colonial attitudes to traditional cultures - French Algeria, Jamaica and the Belgian Congo could feature.
- Tourism will be cited – in other words direct contacts with different cultures rather than indirect contacts through the media. These contacts may help preserve elements of traditional cultures if they are marketable as tourist attractions, but this relationship is often asymmetric and negative; e.g. enclave resorts in the Caribbean.
- Physical isolation is significant. The preservation of traditional cultures in remote and often poorly accessible locations Time in transit is an important aspect of accessibility especially at a global level hence ‘Zomia’.

- Both internal and international movement is likely to cause higher levels of cultural diversity with higher levels of connectivity especially for well-connected cities but this can also be corrosive of traditional cultures
- Candidates should address the possibility that greater connectedness increases cultural diversity (London, Singapore) but also reduces it in remote regions that

**In summary**

- The most obvious conclusion is that this is clearly true in some cases but is a significant simplification. Global media may be less important than local media and the dominant players within a country rather than foreign based corporations.

**Case studies used are likely to include:**

1. Japan/UK/France
2. Iceland
3. Colonialism - Caribbean
4. Myanmar
5. Amish communities.

Question 4 – ‘TNCs are the most important players in the management of health risks.’ Discuss.

- Research the role of different players and programmes in the management of health risk.
- Research a range of locations at different scales to examine how effectively health risks are managed.

#### Indicative Content

**The focus** of this title is the relative significance of Big Pharma in managing risk when compared with other key players

**The framework** chosen may be by the following.

1. Different players including ‘Big Pharma’, national agencies, global programmes largely conducted by the WHO, intermediate technologies and NGOs who provide primary health care
2. Level of development and scale from global through to local
3. Different causes of health risk including environmental factors (including air and water pollution) socio-economic status, poverty and geographic factors such as climate.

#### Key analytical points

- ‘Health risk’ needs careful deconstruction especially to focus on both indirect health risks (e.g. plastic waste disposal impact on fish) affecting the food chain and direct contamination of water and air sources ingested by humans.
- Health risk can be expressed in two dimensions – geographic extent and threat to individuals which needs identifying to address the role of different players.
- The role of the large drug manufacturers is self-evident and many will discuss Covid-19 to illustrate their importance – some may qualify the positives by pointing out the significant role of governments in the development of vaccines and their roll-out.
- There is also likely to be a further critique of the pharmaceutical industry and its selectivity over which drugs to develop and which diseases to combat.
- National governments can promote policies that reduce health risks not just by infrastructure advances to ensure clean water supply and efficient sewage disposal but also through education and policies including taxes on alcohol, sugar and tobacco as well as drug legislation and laws regarding air quality.
- The role of the WHO can be dramatically successful when combined with effective NGO activity as with the Ebola crisis – not all NGO interventions are successful e.g. the cholera outbreak in Haiti 2010.

- Community education programmes are effective in promoting preventative medicine and life-style changes. Cuba is an outstanding example of effective primary healthcare

**In summary**

- Obviously, drug development and production is important but it is necessary to address the title's contention with care and to qualify it – 'sometimes the most important' would be better

**Case studies used are likely to include:**

1. Malawi or other LIDC African states
2. Variations within US/UK
3. Pandemics – e.g Covid-19
4. Pollution legislation

