Mark Scheme (Results)

January 2024

Pearson Edexcel International Advanced Level in Geography (WGE04)
Paper 01: Researching Geography

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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 the unpredictability of tsunamis makes them the most disastrous of tectonic hazards.
• Research the varied reasons why some tectonic hazards become disasters. • Research the different types of tectonic hazard to examine the reasons why there are differences in their predictability and impacts.
Indicative content
The focus of this title is the relative impacts caused by different tectonic hazards. The framework chosen may be by the following. 1. Type of tectonic hazard – one section on earthquakes of varying magnitudes, one on volcanic eruptions, one on tsunamis 2. Scale of hazard and disaster – case-study led using various measurements of intensity/scale mapped against measurements of scale of disaster and the impact on people and property. Key analytical points • Volcanoes are generally easily located but are unpredictable in terms of both the scale of their threat and the timing of that threat; it is not unknown for volcanoes classified as 'dormant' to erupt • Given that their location is generally known land use zoning and other mitigation measures can prevent eruptions from being disastrous – that is obviously not true of the extremely rare mega-events • Earthquakes are less predictable both in terms of location and strength which makes them more dangerous to life and property. • Tsunamis are generally caused by earthquakes although not exclusively so, many of these earthquakes occur in ocean locations thus the problems of prediction and forecasting of potential strength are amplified by lack of accessibility. • Given that most tsunamis are triggered by plate boundary movements, especially at subduction zones they are far more common in the Pacific than in the Atlantic. • The severity of a disaster depends on both the physical nature of the extreme event and the socio-economic structure of the human populations affected by the event- thus socio-economic variables will have a critical impact on the scale of disasters. • Unpredictable events are much harder to plan for but also it is challenging to make a political case for so doing because of their unpredictability. • However, different social and economic geographies will result in different impacts to different people, even within the same region resulting in different levels of vulnerability to natural hazards. • Wealth is one of the most important human factors in vulnerability. The poor are less able to afford housing and other infrastructure that can withstand extreme events. They are less able to purchase resources needed for disaster response and are less likely to have insurance policies that can contribute.

In summary

- Unpredictability is certainly greater for earthquake and tsunami events than for volcanic eruptions. However, although the location of volcanos is reasonable well mapped their explosivity is not well understood, especially the timing of their eruptions. Clearly, very large-scale events change the parameters of 'most dangerous'.

Case studies used are likely to include:

1. 'Boxing Day' tsunami 2004
2. Chilean tsunami event 2010
3. Japanese Tohoku tsunami 2011
4. Turkish/Syrian earthquake 2023
5. Bristol Channel tsunami 1607

Question 2 – **'Climate and the physical environment are the most** important **causes of food supply inequalities.' Discuss.**
• Research the varied physical and human causes of food supply inequalities. • Research a range of locations to examine how climate, environmental and economic factors contribute to food supply inequalities.
Indicative content
The focus of this title are the causes of food supply inequalities ad the level of impact that climate and the physical environment might have on this. The framework chosen may be by the following. • Different causes of food supply inequalities across a range of countries at different stages of development so human causes e.g. population growth and global markets as opposed to physical causes e.g. climate, topography and relief • A 'case-study' approach by area/region with different examples illustrating constraining trends in food supply inequalities. Key analytical points • A key issue to be resolved here is what constitutes food supply inequalities and how it might be measured in order to facilitate a reasonable comparison. • Food inequalities exist at all geographic scales from local-scale food deserts in cites to national and global scale. • The most obvious evidence for inequalities is famine, undernutrition and in some cases malnutrition. • There are physical challenges that limit the carrying capacity in some global regions – these include climate, relief and topography and soil quality. • Climate change has exacerbated the environmental challenges in some arid regions, e.g the Sahel as have human actions from warfare through to crop management practices. • Food (in)security is measured in a number of ways; one of the most useful is the FIES (Food Insecurity Experience Scale) survey which consists of eight questions designed to assess the adequacy of an individual's access to food. In 2017 27% of the world population were food insecure, roughly half of the people in low income developing countries with 10% in high-income countries. • Globally, food supply has increased. However, food prices are often fixed in markets controlled by local food corporations. Large producers have been guilty of dumping subsidised (over)production reducing farm incomes and food security in poorer countries e.g Haiti. • 2017, Sub-Saharan Africa had the highest prevalence of food insecurity (55 percent) and severe food insecurity (28 percent), followed by Latin

America and the Caribbean (32 percent food insecure and 12 percent severely food insecure), and South Asia (30 percent and 13 percent). For the most part these regions are dominated by subsistence agriculture.

In summary

- It is difficult to argue that climate and physical factors are dominant except in the short term and at a local scale. The nature of the global food industry and global markets along with rising income inequalities would appear to be the primary causes of food supply inequalities

Case studies are likely to include:

- Food inequalities at a global scale
- Temporal and spatial variations in global regions e.g. the Sahel
- Land purchases in Africa undermining national food supply
- Contrasting food supply issues in India and China
- Urban/rural contrasts in south Asia

Question 3 - Evaluate the view that traditional cultural landscapes need the protection of both governments and global organisations to survive.
• Research the reasons why there are different values attached to cultural landscapes by the range of players and groups involved. • Research a range of locations to explore different ways cultural landscapes are protected.
Indicative content
The focus of this title is the role of governments and international agencies in protecting 'traditional cultural landscapes'. The framework chosen may be by the following. 1. Case studies of different societies/places at different times with contrasting histories of protecting traditional cultural landscapes. 2. The various threats to traditional cultural landscapes in a range of locations from deforestation to urbanisation and reactions to those threats. This will include governments, some of which are hostile to a diversity of cultural landscapes within their borders Key analytical points • 'Cultural landscape(s)' needs to be deconstructed to allow some assessment of what threats they face. • There is no consensus as to what constitutes 'traditional' although it is often conflated with indigenous cultures there are complexities here – for example when UNESCO awarded Liverpool WHS status, this was valuing a traditional landscape of sorts. • These threats include significant land use changes, notably deforestation threatening traditional cultures and landscape within, for example, Amazonia. Deforestation is a global issue but requires national governments to legislate accordingly. • Many cultural landscapes face an existential crisis not of their own making e.g. the threat of Arctic climate change for traditional cultures in North America, Scandinavia and Russia. These challenges are beyond the remit of many governments although some mitigation policies may offer some protection • Highly centralised states have along history of establishing a dominant culture through language rules, educational systems and, occasionally, genocide of traditional cultures – history of the young USA, attitudes to Aboriginals in Australia, sovietisation of the 'stans'. • Colonialism and neo-colonialism threatened both cultural diversity in general and cultural landscapes in particular from the Highland Clearances to the treatment of pacific island societies during atomic testing. • The rise of 'nationalism' in Europe has also emphasised the role of the state and the redefinition of national characteristics and the renaissance of exceptionalism – this can be seen in the UK and most other European countries. • Assimilation can lead to a loss of cultural diversity as local landscapes lose their language e.g. Koreans in Japan, Italians in the US.

- Indigenous cultures are always changed by levels of globalisation are obviously driven by government attitudes to migration.

In summary

- Governments may be overtly hostile to a multiplicity of cultural landscapes but if not, they will need to legislate to protect them from strong economic forces. International organisation such as UNESCO might help in that task whilst other IGO's such as the IMF will be more nuanced.

Case studies used are likely to include:

1. Arctic communities in Canada/Russia
2. Sami in Finland
3. Indigenous communities in Brazil – Bolsonaro v Lalu
4. The Aymara and Quecha peoples of Bolivia
5. Amish communities

Question 4 – 'Globally, air pollution is now a more serious health risk than water pollution.' Discuss
• Research the reasons why health risks and mortality rates may change over time. • Research a range of locations to investigate the impact of air and water pollution on human health and disease.
Indicative content
The focus of this title is the relative importance of air pollution as a health risk when compared water pollution. The framework chosen may be by the following. 1. Different causes of health risk including economic factors, environmental factors, air and water pollution, socio-economic status, poverty and geographic factors such as climate to establish the 'most serious health risk'. 2. Case-study led report based on different health risks in a wide variety of locations Key analytical points • Health risk can be expressed in two dimensions – geographic extent and threat to individuals which needs identifying in order to address how it varies spatially and temporally. • The best, indirect, measures are probably life expectancy and DALY's which will broadly support the positive link with economic development. • Diseases from dirty water kill more people every year than all forms of violence, including war. 43% of those deaths are children under five years old. Access to clean water and basic sanitation can save around 16,000 lives every week. • However, the threat of air pollution and climate change has now been called the "greatest environmental risk to health." The WHO estimates that 9 out of 10 people breathe polluted air every single day. The organization also predicts that climate change will result in 250,000 more deaths per year from 2030 to 2050. • Fragile and vulnerable states often have weak health care systems, often leaving displaced people without access to essential services or immunization, creating breeding grounds for sickness linked to both air and water pollution. • There is a simple relationship between health risk and economic development is that higher levels of spending on public health and preventive medicine are likely to result is lower health risks in more economically developed countries – this is largely supported by the positive correlation between GDP per capita and life expectancy. • However, this needs considerable qualification to acknowledge the very wide disparities at both a geographic and a socio-economic scale. Given the misleading nature of mean GDP as a measure of economic development variations within countries is often at least as significant than variations between them. • There are clearly some health risks that are less directly related to either air or water pollution. Malnutrition and under-nutrition are obvious examples although weakened immune systems make these populations more vulnerable.

In summary

- Water pollution is a significant risk but only locally where is it likely to be dominant. Elsewhere, air pollution is measurably more of a risk as perhaps are others including conflict and lack of immunisation to vector born diseases. However, climate change is likely to change the picture in the future and on a global scale.

Case studies used are likely to include:

1. Water pollution in India
2. Water pollution in British rivers and coastal areas
3. Air pollution in Indian/Chinese cities
4. Covid-19
5. Malaria and other vector borne diseases.

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