

NYJC H2 Geog Paper 1 Prelims 2018 Mark scheme

Section A – Tropical Environments

1 (a) Explain why tropical climates vary spatially. [12]

Indicative content:

Students will be able to explain why tropical climates (humid and arid tropics) differ from place to place in terms of temperature and precipitation even though the region is located in an area of insolation surplus. Slight differences in temperature patterns can be made to the effects of long term factors like latitude, height above sea level, land and sea, geographic position and ocean currents as well as local ones like cloud cover. In explaining the greater variations in precipitation patterns, students will explain the role of the Hadley cell (factor of latitude in affecting primary pressure cells), topographic features resulting in differences between windward and leeward slopes, continentality effects and ocean currents.

A higher level response will include students' ability to finely differentiate between the humid and seasonally humid tropics' (A_m and A_w) with regard to rainfall patterns (A_m being coastal will have more rainfall from onshore winds during summer monsoon than A_w being continental interiors for same latitude locations). Top marks will be awarded to students who are able to bring in the role of humans in affecting climates via the urban heat island effects i.e. cities as contrasted to surrounding rural areas.

Levels marked using H2 generic level descriptors for 12m SEQ sub-part (a).

1 (b) To what extent can the successful management of the impacts of a flood result from the immediate response to such an event? [20]

Indicative content:

To begin with, students should provide the definition of flooding. The focus of the question lies in the 'immediate response' to a flood event and whether it led to successful management with support from case studies i.e. alleviating the negative impacts of flooding. So, what constitutes an immediate response?

A clear description of 'immediate response' which is indeed 'search and rescue' often in helicopters and boats is required. Having dealt with the immediate, then short term responses like water supplies, housing, shelter and aid in the form of food and blankets etc. can be discussed. Mid-term response measures will include re-housing, insurance payouts and repair of infrastructure. However, for successful management, it is necessary to mention the need for longer-term responses like hard and soft engineering techniques, community preparedness and insurance schemes. Countries that are deemed as well prepared would have also invested time and money to do flood prediction as this not only provides time for evacuation efforts but also aid in the evaluation of the adequacy of current flood protection structures in their countries. Contextualised examples of both successful and unsuccessful countries in flood management are needed.

A higher response to flood management is to look beyond the channel such as management of the whole drainage basin. This will help increase lag time and lower peak

discharge. Measures include controlling the rate of tropical deforestation within the catchment and the management of pluvial flooding due to rapid urbanisation. Noting that flooding after all is a climate led event, it is important for students to recognise that even developed countries are unable to guard against high magnitude, low frequency flooding despite having everything in place. The challenges brought about by climate change such as stronger and more frequent tropical storms only puts more countries at risk in particular the economically weaker countries.

Possible synoptic links:

Theme 1.1 Storm runoff generation, Theme 2.1 Role of the State, Theme 3.1 Climate change due to enhanced greenhouse effect and Theme 3.2 Urbanisation and pluvial floods.

Levels marked using H2 generic level descriptors for 20m SEQ sub-part (b).

2 (a) Explain the nature of flows and stores occurring in the humid and arid tropics. [12]

Indicative content

Students will show the understanding that flows and stores are affected by climate. Indeed climate affects hydrological processes on a regional scale which in turn determines the nature of flows and stores. In order to show the impact of climate, students will have to provide a brief description of the climatic conditions for both regions. As both climates are at the extreme ends of each other in terms of precipitation (though they may exhibit the same high mean annual temp), students will argue that flows and stores of both regions will likely to be affected by input rather than output. The factor of precipitation often plays an overriding role in determining the nature and amount of flows and stores. By this default, both climatic belts should see more differences in flows and stores as compared to similarities.

A higher level response will include students making a finer distinction between climates within the humid tropics as A_m and A_w receive a more seasonal precipitation pattern as compared to A_r . Students will be able to articulate the temporal differences in the nature of flows and stores in their discussion of the two sub-types. In addition, they will recognize the impact of human activities e.g. deforestation, extractive industries as well as local factors such as geology and relief in altering the nature of flows and stores.

Levels marked using H2 generic level descriptors for 12m SEQ sub-part (a).

2 (b) Discuss the factors that contribute to the formation and development of meandering and braided channels. [20]

Indicative content

Students will explain the influence of a variety of factors that contribute to both the formation as well as the development of meandering and braided channels. Climate remains the primary factor as it controls the amount of discharge which in turn affects the velocity of the river to do its work – erosion, transportation and deposition. However, climate alone will not be able to explain fully the two types of channel patterns. Local factors such as geology, abundant bedload and channel slope must be considered to form

the complete picture. Climate together with local factors combine to control water discharge, erodibility of the channel banks and sediment supply.

A higher level response will include how time as a factor could alter the shape of meandering channels such as the formation of cut-offs and ox-bow lake. Likewise, human activities and climate change too have an impact on channel patterns. Both of these factors may create positive feedback loops. Examples could include the impact of extractive industries such as the mining of mineral ores as well as rapid deforestation which have led to high sediment load being discharged into the waterways. This overloads the channel and cause sedimentation to occur resulting in meandering channels becoming braided through time. Similarly, as climate becomes drier, the decrease in discharge will inevitably reduce channel velocity, increase deposition and hence braiding. Hard engineering methods that increase the channel gradient through straightening for flood relief may also cause channels to braid.

Possible synoptic links:

Theme 1.2 Deforestation, Theme 2.2 Extractive industries and Theme 3.1 Climate Change

Levels marked using H2 generic level descriptors for 20m SEQ sub-part (b).

- 3 (a)** Explain ways by which Global Production Networks (GPNs) are able to remain competitive in rapidly industrialising countries. [12]

Indicative content

Students will be able to provide a brief description of the characteristics of GPNs in terms of their structure and operations. As GPNs are being centred around dominant TNCs, the quest to increase their profit margins has seen many of these large firms from industrialised economies shifting production activity across borders to the developing countries. The dominant trend has been for firms in many sectors to focus on their core activity or 'competency' while seeking non-core inputs via external relationships. This trend is part of a broader shift from *Fordist* (mass production) to more flexible *post-Fordist* production systems. The destinations are usually the rapidly industrialising countries i.e. emerging economies such as BRICS. In staying competitive, students will be able to explain how TNCs engage in inter-firm trade such as subcontracting, strategic alliance, joint ventures, franchising and cooperative agreements.

A higher response will include the ability to contextualise each strategy with specific examples of TNCs engaging in them to stay ahead of their game. It is also important to articulate that not all strategies have achieved their intended results such as that of outsourcing when standards have not been met by suppliers.

Levels marked using H2 generic level descriptors for 12m SEQ sub-part (a).

- 3 (b)** “The only way for countries to achieve successful economic growth is to be part of a supranational body.” How far do you agree with this statement? [20]

Indicative content

Students will argue on how supranational bodies are able to help countries; particularly the developing ones in achieving economic success. Students will explain how countries have benefited economically by being part of or worked with a world institution (World Bank, IMF or WTO) and that of a trading bloc such as ASEAN, EU, NAFTA etc. Yet, it is important to note that not all countries have benefited from being a part of a supranational body. As these supranational bodies are being governed by state representatives with bulk coming from the DCs, they tend to work in favour of the richer countries. LDCs and sometimes NIEs have to be at the “mercy” of the conditions laid out by the supranational body as seen in the case of Thailand and Greece during the financial crisis. On a wider note, countries’ participation in a supranational body (ies) is definitely not the only way to achieve successful economic growth. The role of the state and other non-state actors in the global economy (TNCs and civil society, NGOs) should also be considered as critical success factors.

A higher response will see students arguing from the perspective that achieving economic growth stems from the interplay of the power relations between the state, the supranational body as well as non-state actors such as the TNCs and the civil society. Successful countries e.g. Four Asian Tigers highlight the importance of states in managing its partners well in addition to having the vision and commitment in implementing infrastructural, economic and social development policies/strategies. This also includes the ability to garner support from the civil society to implement bottom up approaches to help in the economic and social development of rural areas.

Possible Synoptic links: Theme 1.2 Deforestation, Theme 2.2 Extractive industries and resource management and Theme 3.1 Sustainable Development and 3.2 Reimaging in enhancing urban liveability and promoting urban tourism

Levels marked using H2 generic level descriptors for 20m SEQ sub-part (b).

- 4 (a)** Explain the challenges faced by countries at varying levels of development in the implementation of the Millennium Development Goals 2000 – 2015. [12]

Indicative content

The main objective of the MDGs is an attempt to bridge the enormous magnitude of the inequalities that stem from the effects of globalisation. With its eight overarching goals and 18 specific targets, it has to some extent achieved positive results such as the reduction of extreme poverty as well as improvements made in primary school net enrolment rate. However, the report card has also shown that both LDCs and DCs were confronted with their own distinct set of challenges. Amongst LDCs, greater focus was often paid to economic growth and social-sector spending while ignoring hunger and nutrition, environment and technology transfer. Other challenges included goals being deemed as too demanding and some argued as unrealistic in the attempt to create an incentive for more rapid progress. As for DCs, their challenges include the belief that people in rich countries can largely avoid making changes in their own lifestyles; hence adopting a “business as usual attitude” towards consumption. There were tradeoffs which DCs were

not willing to undertake for a greener environment as they continued to rely on fossil fuels as their main source of energy. Other challenges for DCs include income inequality between states e.g. deindustrialised areas vs those with sunrise industries. Likewise for most middle-income countries, the MDGs may be seen as not particularly ambitious or relevant. Such attitudes only hindered the progress made towards achieving the intended goals.

A higher response will see students highlighting that for certain challenges such as climate change and environmental degradation, they remain common obstacles faced by all countries regardless of their economic status. Global emissions of carbon dioxide have increased by over 50 per cent since 1990. Addressing the unabated rise in greenhouse gas emissions and the resulting likely impacts of climate change, such as altered ecosystems, weather extremes and risks to society, remains an urgent, critical challenge for all nations.

Levels marked using H2 generic level descriptors for 12m SEQ sub-part (a).

4 (b) Examine the relevance of the Limits to Growth theory in understanding population growth and resource utilisation. [20]

Indicative content:

Students will put forth the main tenets of Meadows' LTG theory - we will run into fixed resource limits, but human demands (driven by growing population and affluence) will overshoot those limits and cause a crash (outbreak crash scenario). The discussion will include Meadows' LTG's five variables: population, industrialisation, pollution, food production and resource depletion in the real world context of the 21st century vis-à-vis the concept of an environmental limit. Some evidence to support Meadows' theory include environmental destruction, species extinction, water pollution leading to scarcity and conflicts. Students can make reference to Harvey's contradiction 16. In the counterarguments, students will highlight the limitations of the LTG model whilst offering the alternative perspective offered by the Hedonists theorists - the possibility that even with population growth, food supply and resources can be increased to meet global needs. The tenets of the Cornucopians' and Boserup's will offer alternatives to the pessimists' ideas. Harvey's idea on the relative resource scarcity due to capitalists' exploitation on labour should also be brought in to refute the thesis.

A higher level response could be to assess the theories in relation to empirical data drawn from examples that support both camps. Other factors such as poor governance that reduce and depletes resource base will continue to challenge particularly the HIPC countries in meeting their needs could also be included.

Possible synoptic links: Tropical deforestation (Topic 1.2), Influence of TNCs and States in depleting resources and causing environmental degradation (Topic 2.1), Extractive Industries and Water Management in depleting resources and causing environmental degradation (Topic 2.2) and Sustainable development and Climate Change (Topic 3.1)

Levels marked using H2 generic level descriptors for 20m SEQ sub-part (b).

- 5 (a)** Explain the strategies adopted by countries with small land sizes in coping with climate change. [12]

Indicative Content

Candidates should be able to explain a variety of mitigation and adaptation strategies that are implemented to cope with climate change. Mitigation strategies are strategies implemented to reduce the rate of climate change via the management of its drivers. Adaptation strategies refer to the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities. Responses should be supported by appropriate examples from countries with small land sizes. Countries with small land sizes include small islands and developing states, such as Maldives, Tuvalu, Monaco, Seychelles, Singapore etc.

A higher level response consists of a carefully directed explanation of strategies from more than one country with small land size. Responses should also reveal the impacts and challenges brought about by climate change that are faced by countries with small land sizes and link to the subsequent strategies implemented.

Levels marked using H2 generic level descriptors for 12m SEQ sub-part (a).

- 5 (b)** 'The effects of climate change has economic and social implications.' Discuss this statement with reference to countries at varying levels of development. [20]

Indicative Content

Candidates should include a discussion of a range of effects of climate change and link to their economic and social implications. Effects of climate change include temperature increase, permafrost degradation, rising sea levels, changes to precipitation patterns, increase in frequency of severe weather, increase coastal and river flooding in some areas and drought in others, mass movement, impacts on ecosystems etc. The economic and social implications are things that are likely to happen as a result of those effects. For example, livelihood of people especially farmers, fishermen and indigenous people, health risks, deaths, poverty, economic loss from extreme weather events, economic cost involved in adaptation and mitigation etc. Appropriate and relevant case studies at varying scales and levels of development should be used purposefully to support responses.

A higher level response should discuss the economic and social implications in the context of countries at varying levels of development. Candidates should also consider how the implications vary across space and time. It could also include political implications as a result of the effects of climate change. For example, the power relations between governments at varying levels of development, negotiations at regional and international scales etc.

Possible links to other topics include tropical climates (1.1), tropical deforestation, flooding in the tropics (1.2), structure of the economy, TNCs, role of the state, regional and international organisations, non-state actors (Topic 2.1), water resource management (2.2), measurement of sustainable urban development, issues in sustainable urban development, pluvial floods (3.2).

Levels marked using H2 generic level descriptors for 20m SEQ sub-part (b).

- 6 (a)** Explain the challenges faced by the elderly and one other social group living in countries at low levels of development. [12]

Indicative Content

Candidates should make reference to examples from countries at low levels of development and outline relevant challenges faced by the elderly and one other social group (disabled). Challenges faced by the elderly include mobility, health, safety, poverty, ageism, social isolation, loneliness and elder abuse. Challenges faced by the disabled include stigma, discrimination, abuse, exploitation (social barriers), accessibility (structural barriers), poverty, housing, and financial independence.

A high level response should identify traits or characteristics associated with countries at low levels of development and make explicit links to how these traits or characteristics contribute to the challenges faced or exceptions. Another possible approach is to demonstrate how these challenges could vary across, and within social groups, over a period of time.

Levels marked using H2 generic level descriptors for 12m SEQ sub-part (a).

- 6 (b)** Assess the extent to which strategies to meet the needs of the elderly in urban areas have responded adequately to demographic and social change. [20]

Indicative Content

Responses should consider the extent of adequacy of a variety of strategies to meet the needs of the elderly in urban areas. The extent of adequacy is measured by how much a strategy has responded to the demographic and social change happening in urban areas. Demographic and social changes include ageing population, culture and technology, changes in society due to environmental changes (climate change, natural disasters), social conflict (war, terrorism) etc. More than one example should be provided and evaluated in relation to a criterion/criteria.

A higher level response could apply a set of criteria or a criterion consistently to evaluate different examples. Another approach could be to consider the challenges specific to the context of each example and devising different criteria to evaluate.

There may even be an offer of further solutions or improvements that can be made for the future.

Possible links to other topics include climate change and essential needs of the poor (3.1), development and role of the state (2.1).

Paraphrase: Have the strategies responded adequately to demographic and social change? How adequate are they?

Levels marked using H2 generic level descriptors for 20m SEQ sub-part (b).