

Markscheme

November 2017

Geography

Higher level and standard level

Paper 1

11 pages

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Core theme – patterns and change

Section A

1. Populations in transition

- (a) State the country with the biggest gap between female and male land ownership. [1]

Bangladesh / Nigeria

- (b) Suggest **two** reasons why the percentage of female land ownership in Malawi is similar to the percentage of male land ownership in Malawi. [2+2]

For each valid reason specifically related to land ownership, award [1] for the reason and [1] for further development/detail.

For example: Change in government legislation [1] allowing women to inherit land [1].

Other possibilities include:

- it is an equal society
- matrilineal land tenure systems
- land reform
- male absenteeism/deaths / more men have died/die younger
- implementation of MDGs
- microcredit enabling female participation
- influence of NGOs
- access to education/changing status of women.

- (c) Explain **three** socio-economic impacts of a youthful population for a country. [2+2+2]

For each valid impact, award [1] for the impact and [1] for further development/detail. A youthful population is one with high proportion aged under 16. Impacts may be current or long term, positive or negative.

For example: Costs of providing education [1] will be a large burden for taxpayers [1].

Other possibilities include:

Negative:

- pressure on housing
- pressure on food supplies
- pressure on health services
- pressure on working population to support the young and old / dependency ratios
- unable to control the growing population / political instability in the country
- rise in crime level
- pressures on environment
- provision of **future** jobs.

Positive:

- medical cost is low, leading to economic growth
- youthful population is source of innovation
- employment in education and healthcare
- provides a large cheap **future** workforce
- provides a large tax base for the country
- attractive for investors
- increased resource consumption.

2. Disparities in wealth and development

- (a) Define the term *GNI* (per person). [2]

Award marks for recognition of the components of GNI:

The total value of goods and services produced within a country [1] together with the balance of income and payments from or to other countries [1].

- (b) Using evidence from the graph, outline why Chile is more developed than Equatorial Guinea. [2]

Higher for GNI in Chile [1], higher for HDI in Chile [1].

Needs quantification from at least one measure for award of full marks.

- (c) Explain **two** reasons why countries with similar GNI per person can have very different HDI scores. [2+2]

For each valid reason, award [1] for the reason and [1] for further development/detail.

Each reason should be linked to one of the two other components of the HDI, namely life expectancy and education.

Possible reasons for the difference include:

- government budgetary priorities
- unequal distribution of wealth within a country
- corruption means investment not going to education/health.

- (d) Infant mortality rate is defined as the number of children who die before their first birthday per 1000 live births. Suggest **one** advantage **and one** disadvantage of using infant mortality as a measure of socio-economic development. [2+2]

In each case, award [1] for a valid advantage/disadvantage and [1] for further development/detail.

For example: One advantage is that data for infant deaths are easily available [1] which allows for comparisons to be made with other areas/countries [1].

Possible advantages include:

- infants are the most vulnerable group
- high IMR is a good indicator that a basic need is not available (clean water, sanitation, shelter)
- high IMR is a good indicator that health care is not available.

Possible disadvantages include:

- only a single indicator / composite allows for more factors to be included
- does not distinguish between middle- and high-income countries where IMR figures are very similar
- accuracy of data collection (household survey rather than census in some countries)
- does not show variations within a country.

3. Patterns in environmental quality and sustainability

- (a) State which external forcing shown on the graph has the greatest impact on temperature in the atmosphere. **[1]**

CO₂ / carbon dioxide / greenhouse gases **[1]**

- (b) Outline what is meant by “albedo”. **[2]**

Solar radiation/heat reflected by the surface **[1]**.

Award [1] for further development such as:

- the idea of amount/proportion
- measures how reflective a surface is
- the more reflective a surface is the higher the albedo value
- link between low/high albedo and reflectivity.

- (c) Briefly describe the difference between stratospheric ozone and tropospheric ozone. **[2]**

The difference can be addressed by using own knowledge or with reference to the graph.

Award [1] for valid difference and [1] for further development/detail.

Possibilities include:

- different location/elevation/zone/height within the atmosphere **[1]** with tropospheric ozone being lower/nearer the ground than stratospheric ozone **[1]**
- tropospheric ozone is mainly anthropogenic **[1]** stratospheric ozone is mainly natural **[1]**
- tropospheric ozone has a positive heating effect whereas stratospheric ozone has a negative effect **[1]**, with quantification from graph **[1]**
- radiative forcing is less in stratosphere and more in troposphere **[1]**, with quantification from graph **[1]**
- tropospheric ozone is harmful for breathing **[1]** whereas stratospheric ozone is protective as stops UV **[1]**.

- (d) Explain **two** environmental consequences of global climatic change (global warming). **[3+3]**

Award [1] for a valid consequence resulting from increased temperature of global warming and [2] for further development/exemplification related to the natural environment.

For example: Global warming is leading to melting of the ice caps **[1]**; the meltwater from this leads to a global rise in sea level **[1]**, which will result in the loss of some low-lying islands (or provides relevant example, eg Kiribati) **[1]**.

Other possibilities include:

- changes to ice caps/glaciers
- sea level rise
- drowning/flooding of low-lying islands
- impacts on precipitation patterns
- changes in disease distributions
- changes in the areas covered by different habitats, types of vegetation/fauna
- extreme weather events
- acidification of the oceans
- coral bleaching.

4. Patterns in resource consumption

- (a) (i) Describe the trend for currently-producing oil fields shown on the graph for the period 2015–2030. **[3]**

Award [1] for each of the following, up to [3]. Quantification required for award of full marks.

- declining
- initially at a fast rate
- then later at a lower rate
- rate of decline changes.

- (ii) Suggest **two** possible reasons for the trend you described in (a)(i). **[1+1]**

Award [1] for each valid distinct reason.

Possibilities include:

- exhaustion of existing fields
- it has become too expensive to extract
- political or government action to reduce fossil fuel use/dependence
- there is an increase in alternative sources of cleaner and/or cheaper energy / reduced demand for oil
- production from other oil fields will increase.

- (b) Briefly suggest what is meant by “unconventional” oil and gas. **[2]**

Award [1] for a valid definition of “unconventional” – it is oil/gas not obtained from conventional oil/gas wells/drilling/extraction methods.

Award further [1] for naming a source, such as oil sands; oil shales; or from coal/biomass/liquids produced from the chemical processing of gas or fracking.

- (c) Explain **two** limitations of **one named** source of renewable energy. **[2+2]**

Renewable sources of energy include solar, wind, geothermal, hydro-electric, biomass. Accept nuclear as renewable.

In each case, award [1] for valid limitation and [1] for further development/detail.

For example: Solar – not applicable to all areas / seasons / times of day **[1]**, including times like winter when demand in cool climates is highest **[1]**.

Other possibilities include:

- reliance on weather
- production capacity
- expense of start-up/storage
- environmental issues
- efficiency of production / unit costs of power produced
- affordability for less developed nations.

Section B

| | AO1 | AO2 | AO3 | AO4 | Paper 1 Section B |
|---------------------|--|---|--|--|----------------------|
| Level descriptor | Knowledge/ understanding | Application/ analysis | Synthesis/ evaluation | Skills | Marks 0–15 |
| A | No relevant knowledge; no examples or case studies | No evidence of application; the question has been completely misinterpreted or omitted | No evaluation | None appropriate | 0 |
| B | Little knowledge and/or understanding, which is largely superficial or of marginal relevance; no or irrelevant examples and case | Very little application; important aspects of the question are ignored | No evaluation | Very low level; little attempt at organization of material; no relevant terminology | 1–3 |
| C | Some relevant knowledge and understanding, but with some omissions; examples and case studies are included, but limited | Little attempt at application; answer partially addresses question | No evaluation | Few or no maps or diagrams, little evidence of skills or organization of material; poor terminology | 4–6 |
| D | Relevant knowledge and understanding, but with some omissions; examples and case studies are included, occasionally generalized | Some attempt at application; competent answer although not fully developed, and tends to be descriptive | No evaluation or unsubstantiated evaluation | Basic maps or diagrams, but evidence of some skills; some indication of structure and organization of material; acceptable terminology | 7–9 |
| E | Generally accurate knowledge and understanding, but with some minor omissions; examples and case studies are well chosen, occasionally generalized | Appropriate application; developed answer that covers most aspects of the question | Beginning to show some attempt at evaluation of the issue, which may be unbalanced | Acceptable maps and diagrams; appropriate structure and organization of material; generally appropriate terminology | 10–12 |
| F | Accurate, specific, well-detailed knowledge and understanding; examples and case studies are well chosen and developed | Detailed application; well-developed answer that covers most or all aspects of the question | Good and well-balanced attempt at evaluation | Appropriate and sound maps and diagrams; well structured and organized responses; terminology sound | 13–15 |

5. “Poverty reduction cannot be achieved without improved soil management.” Discuss this statement.

[15]

Responses should show a clear understanding of the terms “poverty reduction” and “soil management” and comment on the direct links or lack of links between the two.

Possible themes include:

- soil erosion and overgrazing and the harm to farmers’ livelihoods
- salinization and the long-term problems it creates in some low-income countries
- poverty reduction can also be achieved through international aid and debt relief
- migrant remittances play an important role in some contexts
- soil management techniques including terracing, afforestation, rotation, additional fertilizers.

Good responses that score well at AO3 (synthesis/evaluation) will consider both sides of this question and may use one or more of the following approaches:

Spatial – On a local, national or regional scale where agricultural activities are the norm, soil management strategies will no doubt have a positive impact on communities and help in reducing poverty. By comparing strategies in rural/urban and/or different geographic regions responses may evaluate the success of different poverty reduction strategies.

Temporal – Soil management may reduce poverty in the long-term, but is unlikely to have any positive impact in the short-term, whereas other strategies such as micro credit, aid, family support payments and remittances may be more appropriate and have more short-term benefits.

Perspectives – Responses could comment that soil management is only part of any poverty reduction strategy as it only focuses on one limited aspect of poverty. Reducing poverty for agricultural communities is not only about yields from farmlands but is also about access to markets and a fair price for produce. Also poverty reduction is not only about increasing wealth, but also intricately connected to education, health and gender issues, where improved soil management may not make much of a difference.

Responses do not need to consider more than one of these ways in order to access top marks. They may also tackle the question on any scale, local, regional or global.

Better answers will discuss not only soil management strategies but other ways in which poverty can be reduced, such as debt relief, remittances, aid, trade and market access.

At band D, responses will describe some aspects of soil management techniques or may focus on alternative approaches to reducing poverty.

At band E, responses will either explain both sides of the question or will synthesize well developed themes to discuss how poverty as a concept goes beyond only the quality of soil.

At band F, expect both.

Marks should be allocated according to the markbands.

6. Discuss why resource conservation strategies may be more effective than population control in reducing global resource consumption.

[15]

Responses should have a clear understanding of the terms “conservation strategies” and “population control” and comment on their utility value when it comes to reducing world resource consumption.

Resource conservation strategies include:

- recycling
- substitution
- waste reduction
- conservation.

Population control may relate to:

- anti-natal/pro-natal policies/trends
- migration
- positive checks including disease, famine, war (Malthus’ view)
- population control by empowering women.

Good responses that score well at AO3 (synthesis/evaluation) will consider both sides of this question and may use one or more of the following approaches:

Spatial – Responses may argue that there is a negative correlation between a country’s ecological footprint/resource consumption and high population growth rates. This will fuel the argument that conservation strategies will be more effective in reducing global resource consumption.

Temporal – Population control would only be important in terms of reducing the world’s resource consumption in the short term because conservation strategies may take a long time to enact and for their benefits to be felt. Stronger responses may comment that as nations develop, population growth rates tend to decline and as such, controls are unnecessary. This is usually accompanied by an increased ecological footprint.

Perspectives – The world’s high-income countries may have the resources to enact conservation measures, but this is unlikely to be a priority for low-income countries. Improved standards of living are linked to reduced fertility. Responses could use the Malthusian debate to help structure their viewpoint. “Control” could include government strategy but also decisions made by the individual woman within the family.

Responses may take a balanced view or may argue one is more effective than the other. They should also tackle the question on a “global” scale (as that is the question).

At band D, responses will describe details of conservation strategies or population control (alternative approaches) making links to how they may reduce global resource consumption.

At band E, responses will either explain “two sides” of the question or will synthesize well developed themes to discuss how resource consumption is not only linked to population and conservation strategies, but extends into economic and lifestyle considerations.

At band F, expect both.

Marks should be allocated according to the markbands.

7. Discuss why some governments find it difficult to provide access to safe drinking water for all their people.

[15]

Possible themes may include:

- safe drinking water and provision/access/affordability
- physical water scarcity and economic water scarcity
- disparities in access
- control of supply (privatization/nationalization)
- possible government corruption
- privatization
- lack of infrastructure in rural areas.

Good responses that score well at AO3 (synthesis/evaluation) will consider both sides of this question. An examination of both sides may involve consideration of those national or regional governments that find it difficult to provide access and those that are able. Other approaches that examine both sides may discuss variations in the level of difficulty. Answers may use one or more of the following approaches:

Spatial – Some governments are in countries that suffer from physical water scarcity, which limits the supply and/or suffer from economic water scarcity, which limits access. This is mainly an issue in low-income countries **but** it is possible that it can be an issue in countries of all levels of wealth. Responses may also look at how the size of the country may pose challenges for water provision.

Temporal – Overcoming physical water scarcity may take a lot longer to achieve than overcoming issues associated with economic water scarcity.

Perspectives – Some governments may prioritize other development goals over the provision of safe water to **all** people, and may even deliberately marginalize some minority communities by not providing safe water.

At band D, responses will describe the provision of safe drinking water in countries, possibly with some description of how some segments of the local population are better served than others (due to wealth, location of residence, etc).

At band E, responses will either explain “two sides” of the question or will synthesize well developed themes to discuss how some segments of the population lack access to safe water because of factors such as wealth, location of residence, etc.

At band F, expect both.

Marks should be allocated according to the markbands.