Markscheme

May 2018

Geography

Higher level and standard level

Paper 1

Core theme: patterns and change

Section A

1.   **Populations in transition**

      (a)   Outline how a country's dependency ratio is calculated.   **[2]**

            Young dependent + old dependent / independent population or economically
            active or working population **[1]**

            Young dependent (0–14,15,16) + old dependent (64,65,66+) / independent
            population or economically active or working population (15–64) **[2]**

      (b)   Describe **two** predicted regional trends shown on the graph.   **[2]**

            *Must have regional context that only reflects the continental grouping of the
            countries to be awarded marks.*

            African nations are predicted to have fewer dependents **[1]**.
            European nations are predicted to have more dependents **[1]**.

            *Must have quantification exemplifying this for award of full marks. If no data then
            award a maximum of **[1]**.*

      (c)   Suggest **one** reason for the predicted change in Nigeria's dependency ratio.   **[2]**

            *Award **[1]** for a valid, distinct reason for decline of dependency ratio and **[1]** for
            additional explanation and/or detail that explains decline in dependency ratio.*

            For example: Fertility rates/birth rates in Nigeria are predicted to fall **[1]**, reducing
            the proportion of young dependents in relation to the working age population **[1]**.

            Other possibilities include:
            • population momentum / large youthful population moving into economically active age
               group
            • in-migration of working-age people.

(d)   Suggest **one positive** and **two negative** socio-economic impacts of an ageing
       population for **one named** country.   **[2+2+2]**

*In each case, award [1] for each valid positive/negative socio-economic impact
related to the named country, and [1] for further development by means of
explanation or detail.*
Award a maximum of [3] if no named country is given and linked to the impacts.

An aging population is one with high/increasing proportion aged over 65. Impacts
may be current or long term.

For example (positive): Grandparent(s) can take care of children **[1]** so that
parents do not have to pay for childcare **[1]**.

For example (negative): Costs of providing elderly care **[1]** may be a large burden
for taxpayers **[1]**.

Other possibilities include:

Positive
- Economy has access to more experienced employees.
- Less money spent on schooling and natal medical care.
- Lower crime rates and less money needed to be spent on policing.
- Grey economy.

Negative
- Smaller work force.
- Reduced taxation income.
- Elderly tend to get sick more frequently.
- Reduced spending on education, policing, transport network, etc.
- Cost of paying for pensions.
- Service decline (schools, sports centres, etc not used by older residents).
- 4:2:1 ratio of dependency.
- Reduced productivity.
- Increased age dependency ratio.
- Lack of a young workforce that has more innovative minds and a better grasp of modern
  technology.

2.   Disparities in wealth and development

(a)   Briefly outline what is meant by:

(i)   gross national income (GNI);   **[1]**

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

(ii)   foreign debt.   **[1]**

Money/debt owed by a country to another country/organization/bank. **[1]**

(b)   Identify which country on the map is most in need of debt relief and briefly justify your choice.   **[1+2]**

- Jamaica **[1]**
- Evidence from the resource (*eg* over 100%/124%) **[1]**
- Development of why it is need of debt relief or comment relative to the other countries **[1]**

Possibilities include:
- It owes over 100 % of its annual GNI **[1]**. No surplus money available for development projects **[1]**.
- All money generated in nation is needed to service its debt **[1]**; it needs this debt burden reduced to enable investments in development projects **[1]**.

*If the wrong country is named, up to **[2]** can still be awarded for correct justification of why it is the most in need of debt relief.*

(c)   Explain, using examples, **two** ways in which increased trade may help reduce economic disparities between countries.   **[2+2]**

Award [1] for a valid, distinct way and [1] for additional explanation and/or detail to explain how increased trade can reduce economic disparities between countries.

There are a number of ways in which increased trade can help reduce disparities between countries such as:
- Increasing incomes in trading nations **[1]** *eg* in Vietnam free trade agreement with USA gave workers improved wages and increase in national income **[1]**.
- Increased income stimulates growth in other sectors **[1]** which increases the national income **[1]**.
- Workers in industries associated with increased trade improve skills **[1]** which increases opportunities to generate more income and reduces disparities **[1]**.
- Increased trade allows countries to develop a manufacturing base **[1]** this generates more income than agriculture or other primary activities **[1]**.
- Increased trade leads to international recognition **[1]** – attracts investment with enhanced reputation which improves economy **[1]**.
- Removal of tariffs/free trade/reduced protectionism increases trade and revenue as there are no barriers to imports and exports **[1]** – this increases the national income **[1]**.
- China joining the WTO and opening up its economy **[1]** has allowed it to become "the workshop of the world in the 21st century" and increase its prosperity **[1]**.
- Free Trade Zones in Uruguay attract large amounts of foreign investment **[1]**. These have become one of the main drivers of the Uruguayan economy **[1]**.
- In Costa Rica increasing use of Fair Trade is supporting farmers growing products such as coffee and bananas to become more income-secure **[1]** and less vulnerable to poverty **[1]**.
- Within trade blocs countries have free access to each other's markets **[1]** this can protect from competition from outside the bloc and maintain the economic viability of a country/industry **[1]**.

3.   **Patterns in environmental quality and sustainability**

(a)   Describe how the estimated impact of climate change on agricultural production
      varies with latitude.   **[3]**

*Award [1] for each valid point, must have some quantification for [3]. Three valid
comments are required before quantification can be applied.*

Possibilities include:
- very adverse impacts at latitudes between 10° and 35° (-30 to -40%) **[1]**
- least impact, or a positive impact, at latitudes of 40° plus (-5 to +10%) **[1]**
- mixed range at very low latitudes, near equator, 0^0 to 10^0 (-5 to approx. -20%) **[1]**
- anomalies at certain latitudes (one country with higher increase than expected at latitude 27° and two countries with unusually adverse impacts at 17°) **[1]**
- overall impact decreases away from the Equator **[1]**
- impact worsens 0° to 20° **[1]**
- from 20^0 to 60^0 the impact gets less **[1]**.

(b)   Suggest **two** reasons why global climate change may lead to an increase in
      agricultural production in some places.   **[2+2]**

*In each case, award [1] for a valid reason and [1] for further
development/exemplification.*

For example: Global climate change may lead to warmer temperatures,
lengthening the growing season **[1]**, which may enable farmers to produce two
crops each year where it was previously only possible to produce a single
crop **[1]**.

Other possibilities include:
- more rain than previously, so higher yields
- warmer climate may extend growing season/cultivation into areas previously too marginal for farming.
- milder winters may decrease cold stress on livestock
- more land available through glacial retreat or melting of permafrost – can be used for farming.

(c)   Distinguish between physical water scarcity and economic water scarcity.   **[4]**

Award [2] for physical water scarcity and [2] for economic water scarcity.

In each case award **[1]** for a basic description and **[1]** for development/exemplification.

The definition in the subject guide is as follows:
- Physical water scarcity, where water resource development is approaching or has exceeded unsustainable levels; it relates water availability to water demand and implies that arid areas are not necessarily water scarce.
- Economic water scarcity, where water is available locally but not accessible for human, institutional or financial capital reasons.

For example:
- Physical water scarcity relates water availability/supply to water demand **[1]**. It means that water resource development is approaching (or has exceeded) a level that is unsustainable **[1]**. *(Drought needs to be put into the context of supply/demand for development credit.)*
- economic water scarcity means that water is available locally, but cannot be accessed **[1]** owing to issues of "human, institutional or financial capital" / cost / technology / incomes / *etc* **[1]**.

Distinction can be implied and does not have to be explicit.

4. Patterns in resource consumption

(a) Describe the pattern of recycling rates shown on the map. **[3]**

Award [1] for each valid descriptive point, up to a maximum of [3]. Must have some quantification for [3].

Award up to a maximum of [1] for repeat of data for regions.

Possibilities include:
- highest rates in Central and/or Northern Europe/Scandinavia (Germany, Austria, Switzerland, Denmark, *etc*)
- lowest rates in Eastern/South Eastern Europe (Greece, Turkey, Bulgaria, Romania, *etc*) and Portugal and Iceland
- Portugal as an anomaly
- most of Western Europe have mid-rates.

(b) Suggest **two** reasons why recycling rates differ greatly between countries. **[2+2]**

In each case, award [1] for a valid reason and [1] for further development/exemplification.

For example: Countries such as Germany, where recycling was introduced decades ago **[1]**, now have much higher recycling rates than countries such as Turkey, where recycling has only just begun **[1]**.

Possible reasons include:
- differences in government policy/prioritization of SDGs/alternative green initiatives *eg* reusing
- private sector incentives (*eg* money for returning electronics, soft drinks containers, *etc*)
- levels of education / environmental awareness
- publicity/advertising
- infrastructure available for recycling
- differences in economic development/costs of recycling – some poorer countries focus on development rather than environment.

(c)   Explain **two** strengths **and one** weakness of **one** local or national strategy aimed
       at reducing the consumption of **one named** resource.   **[2+2+2]**

       *In each case, award [1] for the strength/weakness of one valid existing strategy
       and [1] for further development.*

       *Award up to a maximum of [4] if there is no named resource or located/named
       strategy.*

       *The question does not refer specifically to natural resources and so enables a
       broad definition of resource, eg plastics.*

       Likely strategies include, but are not limited to: conservation, waste reduction,
       recycling or substitution.

       For example (resource substitution): The Canadian province of Alberta has
       introduced a strategy to phase out the use of coal.
       Strength: the province introduced this strategy in order to reduce harmful
       greenhouse gas emissions **[1]** with a target of zero **[1]**.
       Weakness: it is expensive to develop other sources of energy **[1]** as the
       scale/technology for renewable sources is still in early stages of development **[1]**.

Section B

Level descriptor	AO1 Knowledge/ understanding	AO2 Application/ analysis	AO3 Synthesis/ evaluation	AO4 Skills	Paper 1 Section B 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 studies	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 in detail	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. To what extent do the most successful poverty reduction strategies focus on wealth creation and gender equality? **[15]**

Candidates can agree or disagree with the statement but need to be able to support their position. It is also possible that responses may agree with one part of the statement and not another. Either of these approaches is acceptable. Poverty reduction is open to interpretation and responses could distinguish between absolute and relative poverty. There are varied ways of tackling this question.

Responses should make use of examples but responses that focus on describing gender equality and wealth creation initiatives and not focusing on their effectiveness as a tool to reduce poverty will be self-limiting.

Wealth creation could explore the success or lack of success of remittances, financial aid, micro credit schemes, trade and market access and debt relief in helping to reduce poverty. This can be addressed on any scale and it is not necessary that all are addressed. This list is also not exclusive, as the guide allows for any strategy to be explored that reduces poverty. These could all be addressed with a gender twist.

Gender equality could explore the success or lack of success of the MDGs, which focused on equity, education and maternal health. Credit responses that explore the extent to which affirmative action policies, such as improving women's access to markets (including labour, land and credit) and decision-making (from domestic to national) , are successful in the reduction of poverty.

The most successful strategies tend to be multifaceted, focusing on more than one aspect of poverty reduction and recognizing that the effects on gender equality may be indirect.

For band D expect some description of how wealth creation and gender equality can help/not help to successfully reduce poverty. This need not be balanced.

For band E expect either some explanation of how wealth creation and gender equality can help/not help to successfully reduce poverty or some evaluation of the extent of their success using examples.

For band F expect both.

Marks should be allocated according to the markbands.

6. "Population growth is the greatest threat to our planet's soil quality and biodiversity." Discuss this statement. **[15]**

Candidates can agree or disagree with the statement but need to be able to support their position. It is also possible that responses may agree partially with the statement. Either of these approaches is acceptable.

Population growth should be addressed in terms of the regional variations with some regions predicted to grow quite rapidly (Sub Saharan Africa) and others being predicted to experience negative growth (Japan, Europe).

Causes of soil degradation and loss of biodiversity of tropical rainforest (allow other biomes/ecosystems) should be addressed to assess the extent to which population growth is a contributing factor.

Candidates may also look at alternative threats to our planet's soil quality and biodiversity, such as climate change, how an increasing standard of living results in increased consumption irrespective of population growth, the concentration of population in urban areas and the expansion of cities, changing agricultural practices, pollution, invasive species, poaching *etc*.

Responses should make use of examples but responses that focus on describing soil quality and biodiversity and not focusing on the role of population growth will be self-limiting.

It is not necessary for the discussion of soil quality and biodiversity to be of equal depth for the award of full marks.

At band D, expect some description of the issues of population growth, soil quality and biodiversity.

At band E, expect either some explanation of a range of threats that population growth poses to soil quality and biodiversity or a discussion of why other factors besides population growth may be equally or more important in terms of their impacts on soil quality and biodiversity.

At band F, expect both.

Marks should be allocated according to the markbands.

7. "The ecological footprint is the best measure of the relationship between population and resources for different countries." Discuss this statement. **[15]**

Responses should show an understanding of the ecological footprint and how it is calculated and its utility value in measuring the relationship between population and resource use in different national contexts.

Ecological footprint (EF) – The theoretical measurement of the amount of land and water a population requires to produce the resources it consumes and to absorb its waste under prevailing technology. It is usually measured in global hectares per capita – allow other valid ways in which "measurement" can be shown.

The focus of the essay should be on assessing the reliability of the EF as a measure of per capita resource use for different countries. Candidates can agree or disagree with the statement but need to be able to support their position. It is also possible that responses may take a balanced view and look at the strengths and the weaknesses of this as a measure. Responses may give some up-to-date examples/data. They may equally suggest alternative methods more suited to measuring the relationship between populations and resource consumption. It is also equally acceptable that responses refer to the Neo- and anti-Malthusian debate as it is relevant in this context.

Some possible strengths of the EF as a measure of population–resource relationships include:
- easy comparison with other countries
- temporal comparison possible
- as per capita takes into account an individual's average consumption level
- biocapacity (global hectares)
- feel-good factor/national pride
- helps achieve targets (*eg,* Paris 2015)
- perceived to be easy to calculate
- increases awareness.

Some possible weaknesses of the EF as a measure include:
- is only an average per person / extremely wealthy have much larger footprints
- only informative and not a solution
- assumes all of Earth's biocapacity is for human needs only
- data can be unreliable.

For band D expect some description of how the EF can help/not help measure a country's population/resource relationship. This need not be balanced.

For band E expect either some explanation of how the EF can help/not help measure a country's population/resource relationship or some discussion of its effectiveness using examples.

For band F expect both.

Marks should be allocated according to the markbands.