

# **Markscheme**

**November 2023**

**Geography**

**Higher and standard level**

**Paper 2**

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**Paper 2 Section C markbands**

Marks	Level descriptor		
	<b>AO1: Knowledge and understanding of specified content</b>  <b>AO2: Application and analysis of knowledge and understanding</b>	<b>AO3: Synthesis and evaluation</b>	<b>AO4: Selection, use and application of a variety of appropriate skills and techniques</b>
0	The work does not reach a standard described by the descriptors below.		
1–2	<b>The response is too brief, lists unconnected information, is not focused on the question and lacks structure.</b>		
	<ul style="list-style-type: none"> <li>The response is very brief or descriptive, <b>listing</b> a series of unconnected comments or largely irrelevant information. The knowledge and understanding presented is very general with large gaps or errors in interpretation. Examples or case studies are not included or only <b>listed</b>.</li> <li>There is no evidence of analysis.</li> <li>Terminology is missing, not defined, irrelevant or used incorrectly.</li> </ul>	<ul style="list-style-type: none"> <li>No evidence of evaluation or conclusion is expected at this level.</li> </ul>	<ul style="list-style-type: none"> <li>Information presented is not grouped logically (in paragraphs or sections).</li> <li>Maps, graphs or diagrams are not included, are irrelevant or difficult to decipher (only if appropriate to the question).</li> </ul>
3–4	<b>The response is too general, lacks detail, is not focused on the question and is largely unstructured.</b>		
	<ul style="list-style-type: none"> <li>The response is <b>very general</b>. The knowledge and understanding presented outlines examples, statistics, and facts that are both relevant and irrelevant. Links to the question are listed.</li> <li>The argument or analysis presented is <b>not relevant</b> to the question.</li> <li>Basic terminology is defined and used but with errors in understanding or used inconsistently.</li> </ul>	<ul style="list-style-type: none"> <li>If appropriate to the question, the conclusion is irrelevant.</li> <li>There is no evidence of critical evaluation of evidence (examples, statistics and case studies).</li> </ul>	<ul style="list-style-type: none"> <li>Most of the information is not grouped logically (in paragraphs or sections).</li> <li>Maps, graphs or diagrams included lack detail, are incorrectly or only partially interpreted without explicit connections to the question (only if appropriate to the question).</li> </ul>
5–6	<b>The response partially addresses the question, but with a narrow argument, an unsubstantiated conclusion, and limited evaluation.</b>		
	<ul style="list-style-type: none"> <li>The response <b>describes</b> relevant supporting evidence (information, examples, case studies et cetera), outlining appropriate link(s) to the question.</li> <li>The argument or analysis <b>partially addresses the question or elaborates one point repeatedly</b>.</li> <li>Relevant terminology is defined and used with only minor errors in understanding or is used inconsistently.</li> </ul>	<ul style="list-style-type: none"> <li>If appropriate to the question, the conclusions are general, not aligned with the evidence presented and/or based on an incorrect interpretation of the evidence.</li> <li>Other perspectives on evidence (examples, statistics and case studies) and/or strengths and weaknesses of evidence are listed.</li> </ul>	<ul style="list-style-type: none"> <li>Logically related information is grouped together (in sections or paragraphs) but not consistently.</li> <li>Maps, graphs or diagrams included do not follow conventions, and include relevant and irrelevant interpretations in the text (only if appropriate to the question).</li> </ul>

7–8	<p><b>The response addresses the whole question, the analysis is evaluated and the conclusion is relevant but lacks balance.</b></p> <ul style="list-style-type: none"> <li>• The response describes relevant supporting evidence correctly (information, examples and case studies) that <b>covers all the main points</b> of the question, describing appropriate links to the question.</li> <li>• The argument or <b>analysis is clear</b> and relevant to the question but one-sided or unbalanced.</li> <li>• Complex terminology is defined and used correctly but not consistently.</li> </ul>
9–10	<p><b>The response is in-depth and question-specific (topic and command term); analysis and conclusion are justified through well-developed evaluation of evidence and perspectives.</b></p> <ul style="list-style-type: none"> <li>• The response explains correct and relevant examples, statistics and details that are integrated in the response, explaining the appropriate link to the question.</li> <li>• The argument or analysis is balanced, presenting evidence that is discussed, <b>explaining complexity, exceptions and comparisons</b>.</li> <li>• Complex and relevant terminology is used correctly throughout the response.</li> </ul>

## Section A

### 1. Changing population

- (a) (i) Identify the age group with the greatest increase in population from 1950 to 2020. [1]

65+

- (ii) Estimate the change, in millions, in the number of young dependents (ages 0–15) from 1950 to 2020. [1]

Approximately 17 [16-18]–12 [11-13] or 5 (*accept 4 to 6*)

- (b) Suggest **two** economic reasons why this country might need a pro-natalist policy. [2 + 2]

Award [1] for a valid reason related to need for pro-natalist policy and [1] for development linked to economy.

For example: It has a low-medium birth rate/ declining number of young dependents/increasing number of ageing population [1] so there will not be enough working adults in the future [1].

Other possibilities include:

- To avoid an ageing population which will be expensive to support.
- A larger older population will need to claim pensions/lower old age dependency means less burden on social welfare/pensions.
- Economic growth – a larger population contributes to growth via consumption, markets and demand.
- More government money will be required for healthcare and social care.
- To reduce the need for migration to overcome shortage of labour.
- Tax revenues will decrease if working population falls.
- Increase the young population which is more innovative and can drive economic development.
- Increase young people – attractive for FDI.
- Maintain rural communities – support the agricultural sector.

- (c) Explain **two** positive consequences of the rapid population growth of a megacity. **[2 + 2]**

Award **[1]** for a valid positive consequence and **[1]** for development/exemplification.

For example: An increase in youthful population from rural areas brings more ideas and innovation **[1]** positively impacting businesses and the workforce **[1]**.

More people in the city encourages a greater number of TNCs to set up business **[1]**, e.g. Amazon in Bangalore **[1]**.

Other possibilities include:

- Megacities have concentration of population which gives a pool of labour - driver of economic growth.
- Growth of markets – large number of people/workers.
- Economies of scale/specialization – businesses can produce goods efficiently.
- Focus of social/entertainment facilities – population allows development of theatres, sports etc.
- Cultural diversity – megacities are melting pots of cultures which leads to a vibrant and diverse cultural environment.
- Higher education and research – megacities host major universities and research institutions.
- Gives tax revenue to the city – use to improve infrastructure
- Economic growth of the city enables money to be sent back to source areas and thus improve rural areas.

## Global climate – vulnerability and resilience

2. (a) Outline **one** way in which patterns of animal migration are affected by climate change. [2]

Award [1] for the change in pattern of animal migration and [1] for development/exemplification linked to climate change.

For example: Timing: animals are migrating earlier/further [1] due to an increase in temperatures/changing seasons [1].

Other possibilities include:

- Altered migration routes – climate change can change the distributions of habitats; food sources and barriers - migration pathway routes change as a response.
- Sea level change can result in changes to coastal habitats – species such as turtles adjust migration routes.
- Relationships between predator/prey changes migration pattern – e.g. expansion of seasonal range of fish species makes them prey for new predators
- Growing season starts earlier due to melting ice / rainfall changes – have to start migrations at different time/earlier.
- Temperature relate challenges – some species are highly adapted to specific temperature ranges – can lead to heat stress during migration and increased mortality.
- Disrupt migration routes – extreme weather events such as drought/wildfires.

- (b) Suggest **two** ways in which social differences may lead to increased vulnerability to climate change. [2 + 2]

Award [1] for the valid social difference and [1] for how this can lead to disparities in exposure to climate change.

Social differences are likely to include age, gender or education which are identified in the guide. Accept others as identified below.

For example: As people get older they are more physically vulnerable [1] and therefore more at risk of heat stroke / dehydration [1].

Other possibilities include:

- Lack of education – people with limited access to education have less knowledge about climate risks/do not participate in climate resilient practices.
- Gender role differences e.g. collecting water/women have less say in land use decisions, disaster preparedness, resource management – makes them more vulnerable.
- Prejudice due to race/ethnicity/caste e.g. forced to live in more risky areas.
- People who are poor – have less access to food, shelter, healthcare insurance.
- Lack of social and political power-vulnerable people have limited influence on decisions.
- Occupational differences – some rely on the land for a living and are most affected.
- Religion/cultural beliefs – certain religious communities may be concentrated in areas susceptible to climate change.
- Political groups – some political groups deny climate change and delay measures to address climate change leaving communities vulnerable.

- (c) Explain **two** ways in which corporate strategies can help address climate change issues.

**[2 + 2]**

Award **[1]** for identification of a valid corporate strategy and **[1]** for how that addresses an issue related to climate change.

For example: Organizations such as ExxonMobil can support climate change technologies **[1]** such as “carbon capture”, which reduces the amount of CO<sub>2</sub> in the atmosphere **[1]**.

Other possibilities include:

- Companies set targets to reduce GHG – energy efficiency, renewable energy adoption.
- Supply chain management – working to reduce emissions, minimize waste reduce emissions from transport or methane from waste tips.
- Sustainable packaging – eco-friendly materials, reduce waste, recycle reduces methane from waste tips and gases produced in the production of packaging.
- Businesses/companies lobbying/collaborating with government – joint ventures, partnerships will reduce GHG.
- Promoting education – provide education materials to schools/engage employees to adopt sustainable practices which reduce emissions.
- Using geo-engineering techniques – captures carbon and stores it below ground.
- Carbon offsetting and/or trading by companies – planting trees to act as carbon sink.
- Raising awareness through advertising campaigns – encourages people to use less energy.



### Global resource consumption and security

3. (a) State **two physical** factors that make this place a good location for a solar energy farm. [1 + 1]

Possibilities include:

- There is a large amount of space available/ land available.
- There is a large amount of sunshine hours.
- Clear skies/lack of cloud cover.
- Flat land.

- (b) Explain **two** reasons why some countries decide **not** to utilize nuclear power. [2 + 2]

Award [1] for a valid drawback of the use of nuclear power and [1] for development/ exemplification.

For example: Nuclear power plant accidents could release radiation [1] which can cause considerable damage to wildlife and humans [1].

Other possibilities include:

- Rogue state/terrorist use of nuclear fuel for weapons.
- Some countries are skeptical of using the energy for fear of reputation.
- Lack of access to the technology / reliance on foreign technology / technologies limited to a few countries meaning reliance on foreign suppliers.
- Lack of domestic resources – countries do not have deposits of natural resources e.g. uranium.
- High construction and decommissioning costs - there may be cheaper alternatives.
- Disposal of nuclear waste – waste is hazardous for thousands of years.
- Political/public opposition – based on safety/environment/ethical concerns.
- Availability of alternative sources – some countries have access to renewable energy/fossil fuels.

- (c) Explain **two** ways in which nations can improve their water security. [2 + 2]

Award [1] for a valid way and [1] for development/exemplification.

For example: Improving sanitation [1] so that clean water is accessible for all [1].

Using sustainable practices [1] e.g. rainwater harvesting / using grey water [1].

Other possibilities include:

- Minimizing embedded water.
- Changing diets, such as eating less meat – decrease water used to keep livestock.
- Desalination plants/purification systems – increase the quality of water available.
- Increase agricultural efficiency/sustainable agriculture – water-saving irrigation decreases the amount of water needed.
- Storing water (dams) – ensure availability of resources.
- Increasing the price of water – will reduce the demand for water.
- International cooperation (transboundary rivers/aquifers).
- Protect watersheds – ensure that pollution and deforestation are limited.
- Raise public awareness – educate people about conservation/protection of water sources.
- Diversification of supply – obtain water from a variety of different/alternative sources.

## Section B

4. (a) (i) State the difference between the two regions in the number of new displacements in 2020. [1]

8.7 million

- (a) (ii) State the type of map used to show the displacement events in 2020 for the two regions. [1]

Dot map/dot distribution map

- (b) Most Sub-Saharan African countries have a low gross domestic product (GDP) per person. Suggest **one** reason why governments of these countries have a limited ability to deal with the **environmental** impacts of internally displaced people (IDPs). [2]

Award [1] for identifying a valid reason and [1] for a valid development related to government ability to deal with environmental impacts.

[NB - lack of funds is stated in the question]

For example: Sub-Saharan countries generally have more limited infrastructure [1] and thus cannot provide the clean water needed for the displaced people [1].

Other possible reasons:

- Corruption – e.g. less money directed towards collection of waste.
- Military conflict – e.g. electric cables have been destroyed so must use wood.
- Scale of displacement – the numbers involved overwhelm the capacity of the government to provide housing for people.
- Not included in the priorities of a country.

- (c) To what extent does the evidence in the infographic support the view that recent internal displacements of people in both regions have similar characteristics? [6]

Award [1] for each valid point supported by evidence taken from the infographic, up to a maximum of [5].

Award a maximum of [4] if only one side of the argument is given.

Award the final [1] for an overall appraisal, which weighs up the infographic as a whole.

For:

- Disasters less than conflict/violence over 2011-2020 in both regions
- Both have fluctuating pattern of conflict and violence
- Similar overall age structure
- Countries with most displacements have more conflict than disasters
- New displacements are more conflict than disaster generated
- Both regions find it difficult to address environmental impacts

Against:

- More displacement in SSA – number 11.1/2.4 or percentage 27.4/5.9.
- Higher numbers in top 5 countries.
- Conflict proportionately more important in Middle East and North Africa (MENA).
- Events more clustered in MENA/more dispersed in SSA.
- Higher proportion of 25–64 year olds in MENA.
- Higher proportion of young dependants in SSA.
- SSA has fluctuating disasters whilst MENA has trend that is slowly increasing.

For example:

The infographic shows that conflict is a more cause of internal displacement in MENA [1] as from 2011–2020 the number of displacements from disasters is mostly below 0.5 million/yr whilst conflict usually generates more than 2 million/yr [1]. SSA has a higher proportion of the global total in 2020 [1]. The environmental impacts of internal displacement are higher in MENA countries [1] but the economic impact is similar [1]. The infographic seems to show there is a significant difference in the characteristics of displacement [1].

## Section C

5. “Changes in the global energy balance are primarily the result of natural processes rather than human activity.” To what extent do you agree with this statement? [10]

*Marks should be allocated according to the mark bands.*

Possible applied themes (AO2) demonstrating knowledge and understanding (AO1):

- Responses should have an understanding of what is meant by the global energy balance – the relationship between incoming shortwave radiation and outgoing longwave radiation. There should also be some recognition that the energy balance has changed over both long and short term. Candidates may refer to specific events such as glaciations, the Little Ice Age and present-day enhanced greenhouse effect.
- Responses should show an understanding of the natural processes that change the energy balance. Comments may refer to orbital variations, solar variability and volcanic activity. Candidates should link the natural processes to changes in the global energy balance, possibly with reference to specific events.
- Responses should show an understanding of human intervention processes and how these processes impact the global energy balance. The increased production of greenhouse gases can be related to industrial development, globalization, trade, agricultural production and lifestyle changes. This will probably be related to present day climate change. Some answers may refer to human interventions to reduce greenhouse gas emissions.
- Responses may refer to the processes operating in feedback loops alter the global energy balance. Comment could refer to the natural operation of feedback loops involved in albedo changes and methane gas relief but recognise that there is a varying scale of human intervention that instigates and fuels their functioning.
- When considering the extent of agreement candidates could adopt a variety of approaches. Some may review the relative importance of natural/human over time and discuss changing balances over geological/historical and recent time periods. An alternative approach would be to examine the scale of change with reference to short term events such as volcanic eruptions as opposed to longer time and more global events such as present-day climate change. Some may comment on the integration of natural and human causes of change. Some answers may refer to their actions or non-intervention.

Good answers may be well-structured (AO4) and may additionally offer a critical evaluation (AO3) which focuses on the relative role of natural and human processes/actions/intervention in changes to the global energy balance. Responses may address relevant key concepts in their discussion.

**For 5–6 marks**, expect a weakly-evidenced outlining of some human and natural process that lead to changes in the global energy balance.

**For 7–8 marks**, expect a well-structured account, which includes:

- either a well-evidenced synthesis which links together several themes from the guide and addresses both sides of the statement
- or a critical conclusion (or ongoing evaluation) informed by geographical concepts and/or perspectives.

**For 9–10 marks**, expect both traits.

6. “The growth of the new global middle class is the main threat to the resource security of places.” To what extent do you agree with this statement?

[10]

*Marks should be allocated according to the mark bands.*

Possible applied themes (AO2) demonstrating knowledge and understanding (AO1):

- Responses should have an understanding of the growth of the new global middle class. This could include a brief review of the reasons for the growth of the new global middle class and comments on the reduction of poverty and increase in disposable income.
- Responses may develop a definition of the meaning of resource security as it relates to the ability of people to guarantee the availability of natural resources. Responses may comment on resources per se or examine individual types of resources.
- Responses should link the growth of the new global middle class with trends in resource consumption. This will probably take the form of an analysis of how increases in overall and individual demand link to additional pressure on water, land/food and energy resources. Answers may develop how these pressures operate to cause changes in resource availability in all or some of the identified supplies.
- Some candidates may further develop the idea of threat by developing issues associated with the water-food-energy nexus that follow on from the growth of the new global middle class. This could be place specific and give emphasis to the complex interactions involved.
- Responses may examine how other factors may impact upon resource security. Overall population growth will increase the demands for resources and so impact upon their security
- Changing population distribution may put pressure on resources in specific places e.g. migrations and refugees.
- Climate change may impact upon the supply of resources. The scarcity of specific resources may lead to competing demands that cannot be met. Some responses may comment on how pressures to cut carbon may lead to pressure on alternatives.
- The new global middle class may be a solution to resource insecurity - adopt more sustainable methods of resource consumption such as renewable energy / circular economy
- Political factors may influence resource security either by unrest and access to resources or resources being used as a political weapon.
- Some answers may contrast the impact of the new middle class with the established HICs.
- Responses may look to specific places as an evaluative approach or comment on how different places change their resource security over time.

Good answers may be well-structured (AO4) and may additionally offer a critical evaluation (AO3) which focuses on the relative importance of the new global middle class. Responses may address relevant key concepts in their discussion.

**For 5–6 marks**, expect a weakly-evidenced outlining of some threats to resource supply from the new global middle class and other factors.

**For 7–8 marks**, expect a well-structured account, which includes:

- either a well-evidenced synthesis which links together several themes from the guide and addresses both sides of the statement
- or a critical conclusion (or ongoing evaluation) informed by geographical concepts and/or perspectives.

**For 9–10 marks**, expect both traits.

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