

Markscheme

May 2025

Geography

Higher level and standard level

Paper 2

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Paper 2 Section C markbands

Marks	Level descriptor		
	AO1: Knowledge and understanding of specified content AO2: Application and analysis of knowledge and understanding	AO3: Synthesis and evaluation	AO4: Selection, use and application of a variety of appropriate skills and techniques
0	The work does not reach a standard described by the descriptors below.		
1–2	<p>The response is too brief, lists unconnected information, is not focused on the question and lacks structure.</p> <ul style="list-style-type: none"> • The response is very brief or descriptive, listing 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 listed. • There is no evidence of analysis. • Terminology is missing, not defined, irrelevant or used incorrectly. 		
3–4	<p>The response is too general, lacks detail, is not focused on the question and is largely unstructured.</p> <ul style="list-style-type: none"> • The response is very general. The knowledge and understanding presented outlines examples, statistics, and facts that are both relevant and irrelevant. Links to the question are listed. • The argument or analysis presented is not relevant to the question. • Basic terminology is defined and used but with errors in understanding or used inconsistently. 		

<p>5–6</p>	<p>The response partially addresses the question, but with a narrow argument, an unsubstantiated conclusion, and limited evaluation.</p> <ul style="list-style-type: none"> • The response describes relevant supporting evidence (information, examples, case studies et cetera), outlining appropriate link(s) to the question. • The argument or analysis partially addresses the question or elaborates one point repeatedly. • Relevant terminology is defined and used with only minor errors in understanding or is used inconsistently. <ul style="list-style-type: none"> • 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. • Other perspectives on evidence (examples, statistics and case studies) and/or strengths and weaknesses of evidence are listed. <ul style="list-style-type: none"> • Logically related information is grouped together (in sections or paragraphs) but not consistently. • Maps, graphs or diagrams included do not follow conventions, and include relevant and irrelevant interpretations in the text (only if appropriate to the question).
<p>7–8</p>	<p>The response addresses the whole question, the analysis is evaluated and the conclusion is relevant but lacks balance.</p> <ul style="list-style-type: none"> • The response describes relevant supporting evidence correctly (information, examples and case studies) that covers all the main points of the question, describing appropriate links to the question. • The argument or analysis is clear and relevant to the question but one-sided or unbalanced. • Complex terminology is defined and used correctly but not consistently. <ul style="list-style-type: none"> • If appropriate to the question, the conclusion is relevant to the question, aligned with the evidence but unbalanced. • Other perspectives on evidence (examples, statistics and case studies) and/or strengths and weaknesses of evidence are described. <ul style="list-style-type: none"> • Logically related information is grouped together (in sections) consistently. • Maps, graphs or diagrams included contribute to/support the argument or analysis (only if appropriate to the question).
<p>9–10</p>	<p>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.</p> <ul style="list-style-type: none"> • The response explains correct and relevant examples, statistics and details that are integrated in the response, explaining the appropriate link to the question. • The argument or analysis is balanced, presenting evidence that is discussed, explaining complexity, exceptions and comparisons. • Complex and relevant terminology is used correctly throughout the response. <ul style="list-style-type: none"> • If appropriate to the question, the conclusion is relevant to the question, balanced and aligned with the evidence. • Evaluation includes a systematic and detailed presentation of ideas, cause and effect relations, other perspectives; strengths and weaknesses of evidence are discussed; (if appropriate) includes justification of the argument and conclusion. <ul style="list-style-type: none"> • Response is logically structured with discussion (and if appropriate to the question, a conclusion) focusing on the argument or points made, making it easy to follow. • Maps, graphs or diagrams are annotated following conventions and their relevance is explained and support the argument or analysis (only if appropriate to the question).

Section A

1. Changing population

- (a) (i) Estimate the population of New York in 2000. [1]
17-18 (million)
- (ii) Identify the city with the fastest growth rate between 2000 and 2020. [1]
Shanghai

- (b) Explain **two** positive consequences for individuals resulting from the growth of megacities. **[2+2]**

Award [1] for each valid positive consequence for the individual be it social or economic and another [1] for development or exemplification linked to growth of megacities. Reference to individual can be in consequence or development

For example: Opportunity for further education **[1]** as a large city supports a variety of universities and colleges **[1]**.

Other possibilities could include:

- Increased employment/salary opportunities - as a growing city attracts new businesses.
- Higher wages/income - concentration of industries in megacities increases competition for labour.
- Housing opportunities – growth of rental markets for people/development of transit-orientated developments to reduce transport costs.
- More cultural opportunities – growing cities attract migrants from many different locations and cultures.
- Access to specialised services – concentration of population supports wide range e.g. healthcare
- Access to leisure activities – megacities have wide variety of entertainment options.
- Greater social mobility – greater opportunities due to educational and employment options.
- Access to knowledge transfer and networking – concentration of professional networks in megacities.

Accept other valid consequences.

- (c) Explain **two** reasons why fertility rates often decline when economic growth occurs. [2+2]

In each case, award [1] for a valid reason and [1] for development of how it impacts upon the fertility rate.

For example: Increased cost of living **[1]** more difficult to afford large families so fertility rate declines **[1]**

Possibilities include:

- Economic growth is often associated with a change from rural to urban society – the value of children changes as they become an economic burden, so fertility rates decline.
- More education for women – delays marriage/childbirth.
- Better health care/reduced child mortality rates – fewer replacement births.
- Changing status of women – women have more freedom and rights, thus giving them more decision-making powers.
- Career opportunities for women – have fewer children to pursue carer goals.
- Greater access to family planning – information and services.
- Changing economy – shift from agriculture decreases benefit of lots of children.

Accept other valid reasons.

2. Global climate — vulnerability and resilience

- (a) Outline **two** components of the global energy balance. **[2]**

The incoming solar radiation **[1]** and the outgoing terrestrial radiation **[1]**.

Maximum [1] if no details of type or direction of radiation.

Accept other valid wording:

Incoming – shortwave light/ultraviolet radiation

Outgoing – longwave radiation/infrared radiation/sensible heat

- (b) Suggest **two** ways in which human activity has changed terrestrial albedo. **[2+2]**

Looking for answers that comments on the reflection of sunlight by Earth's surface - accept land and oceans but not atmosphere.

*In each case, award [1] for a relevant human activity that is **linked** to a change in terrestrial albedo and [1] for explanation/exemplification of the change in albedo*

Increasing temperatures due to climate change melt snow and ice which reduces the albedo **[1]** – darker ocean surfaces are uncovered which absorbs more sunlight **[1]**.

Deforestation removes trees which generally have a low albedo **[1]** – exposed soil and grass are lighter surfaces and reflect more sunlight **[1]**.

Use of land for agriculture can alter the albedo of an area **[1]** – cropland reflects more light than most natural surfaces/replacing grassland with crops gives reflective bare soil between crops **[1]**.

Use of land for urbanization often decreases albedo **[1]** – urban areas have dark surfaces/asphalt/concrete which absorb more light than natural surfaces **[1]**.

Desertification removes vegetation which absorbs light and has a lower albedo **[1]** – exposed lighter soils are more reflective and have a higher albedo **[1]**.

- (c) Explain **two** ways in which economic development has led to a change in greenhouse gas emissions. **[2+2]**

In each case, award [1] for the way in which economic development has led to change in greenhouse gas emissions [1] for explanation/exemplification that identifies the nature of the change

Responses could explain ways in which economic development leads to increases or ways it decreases the emission of greenhouse gases.

Credit ways which lead an increase in greenhouse gas emissions as well as those which lead a decrease in greenhouse gas emissions

Possible ways which economic development can lead to an increase in greenhouse gas emission include:

- Urbanization through the expansion of urban infrastructure such as road and rail networks etc - require the increased use of fossil fuels to drive machinery, more GHGs such as carbon dioxides are emitted in the process.
- Commercialization of agriculture to expand food productivity - results in the release of more emissions of nitrous oxide, carbon dioxide and methane/through Increased use of fertilizers.

- Increased domestic consumption of energy-intensive technologies /lifestyle changes associated with higher incomes - leading to increased use of vehicles with higher fuel consumption capacities, air conditioners/meat production and methane.
- Expansion of manufacturing/industrialisation – industrial processes rely on burning of fossil fuels.
- Deforestation for commercial uses – carbon dioxide release from organic debris.

Possible ways which economic development can lead to a reduction in greenhouse gas emission include:

- Increased drive for technological innovation/use of renewable energy - adoption of energy-efficient practices that reduce greenhouse gas emissions.
- Higher investments in large-scale, government-led climate change mitigation and adaptation projects - such as renewable energy infrastructure that reduce greenhouse gas emissions.
- Wealthier nations have stricter standards/public demand for higher standards – enforce environmental regulations.
- Economic development has shift from manufacturing to services – service sector less energy dependent.
- Growth of efficient transport systems – developed economies invest in public transport/EV infrastructure.
- Economic development improves the standard of education/environmental awareness – leads to behavioural change such as reduction of meat consumption/energy conservation measures/use of public transport.

3. Global resource consumption and security

- (a) Describe the distribution of areas of food emergency in Ethiopia. **[2]**

Award [1] for each valid statement, up to a maximum of [2].

Possibilities include:

- band across the south of the country
- smaller area in north
- two clusters

- (b) Explain how **two** different factors may reduce the food security of a country. **[2+2]**

*In each case, award [1] for a relevant factor that **reduces** food security and [1] for explanation/exemplification of the reduction to food security*

For example: Climate change causes extreme weather **[1]** which damages crops and reduces yields **[1]**

Other factors include:

- Conflict reduces production – disruption of agriculture/destruction of crops/loss of workforce/diversion of food.
- Trade policies and restrictions/tariffs – disrupt global markets and limit access to food.
- Natural disasters such as earthquakes etc., destroy agricultural land/crops/infrastructure
- Population growth – put pressure on production.
- Unsustainable agricultural practices/land degradation – causes soil erosion/reduces amount of good land for agriculture.
- Price volatility – makes food unaffordable.
- Recession/economic shocks – leads to job loss which impacts ability to access food.
- Lack of investment in agriculture – hampers productivity.
- Poor infrastructure – hinders distribution of food.
- Limited access to modern farming techniques – decreases productivity.

- (c) Explain how national energy security may be disrupted by **one** environmental issue **and one** geopolitical issue. **[2+2]**

In each case, award [1] for a relevant issue and [1] for explanation/exemplification of the disruption to energy security.

Environmental

For example: Period of drought **[1]** may reduce HEP production and supply of electricity **[1]**.

Other possibilities include:

- Hurricanes/storms/heatwaves – damage infrastructure, disrupt production.
- Landslides/earthquakes/volcanoes – destroy power plants/infrastructure.
- Environmental protection legislation/reduction of pollution – close fossil fuel plants and give supply gaps.
- Sea level rise – damages coastal infrastructure and production.

Geopolitical

For example: War/conflict e.g. Ukraine **[1]** has disrupted the production/flow of imported oil and gas [from Russia], increases prices **[1]**.

Other possibilities include:

- Sanctions/international relations tensions – disrupts the supply.
- Embargoes – cuts off supplies of fuel.

- Supply reduction/over-reliance/dependence on other nations (OPEC) – supplies not in control of the nation.
- Chokepoints in distribution – subject to disruption/piracy.
- Cyber warfare – shut down power supplies.
- Cartels such as OPEC – influence global supply and prices/affordability of energy.

Section B

4. (a) Using information from the map:
- (i) identify which Australian state lost the most population from interstate migration between 2016 and 2021; **[1]**
New South Wales
 - (ii) state the range of interstate migration between 2016 and 2021. **[1]**
-102,200 to 107,500
(Accept 209,700)

- (b) Suggest **one** reason why the information about the reasons for migration may be inaccurate. **[2]**
Award [1] for a valid suggestion associated with interstate migration and [1] for further development.

Possibilities include:

- Sample size
- Distribution of sample – is it stratified
- People could move for more than one reason / a variety of reasons / reasons outside these categories
- People don't necessarily tell the truth/fail to give information.

- (c) To what extent does the evidence presented in the infographic support the view that the characteristics of population change in Australia are similar across all parts of the country? **[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.

Support

- The main movement of population is to the main cities
- All capital cities have increase in population – all above 50% change
- Reasons for movement are the same between 2006 and 2018
- Reasons for interstate migration are similar proportion between years – housing approx. 8%
- Fluctuating numbers of interstate migration over time in NSW, Queensland and Victoria

Non Support

- Components of change in capital cities is different – lowest 58.7% highest 200%
- Some states have positive numbers 2016-21 whilst others are negative – NSW has a loss, Tasmania gains
- Proportion of reasons for interstate migration different – employment has more in 2018
- Differences in rate of interstate migration over time – Queensland has decrease and increase
- Some states have all positive migration, some all negative and some a mixture of positive and negative
- Victoria and NSW have decreased numbers of migrants between 2002 - 22 whilst Queensland have increased.

For example: This can be seen to be true as the cartoon shows that there is a movement to the main cities **[1]**. The reasons for migration have stayed the same between 2006 and 2018 **[1]** although lifestyle has become less important and family more important **[1]**. There has been a growth in all capital cities **[1]** although the range of growth is 222.8% **[1]**. Overall, it would seem that the evidence indicates that the characteristics of change are different **[1]**.

Section C

5. “The growth of the global middle class threatens the availability of water more than any other resource.” To what extent do you agree with this statement? [10]

Water availability refers to the physical availability, accessibility, and quality of water resources. The rising demand for water associated with growing affluence can threaten water availability, especially in regions where water scarcity is already a problem, and where growing affluence is accompanied by population growth.

Marks should be allocated according to the mark bands.

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

- The growth of the middle class leads to increasing per capita household demand for water, associated with larger homes, gardens and water-using appliances and amenities.
- Greater affluence is also associated with changes in dietary habits, including more water-intensive foods, like meat and dairy. Industrialization and urbanization, associated with growing affluence, put further pressure on water resources and water quality. These impacts on water availability may be local, regional or global, e.g. through the transfer of water via trade (virtual water).
- Increasing affluence may also lead to improved water infrastructure, technology and conservation efforts leading to improved water availability. However, since water efficient systems provide more water to a given area, water-intensive activities may be expanded, increasing overall consumption.
- Inequalities in water access and availability may be relevant in some contexts, with increased competition for water between different income groups and other consumers of water.

Good answers may be well structured (AO4) and may additionally offer a critical evaluation (AO3) of the statement examining how the growth of the global middle class threatens availability of water in comparison to other resources, for example food and energy. Similarly, candidates may examine other factors affecting water availability such as population growth and climate change, which in some contexts may be considered greater threats than growing affluence. One approach might be to explore the prompt through two or more contrasting **places** and/or spatial **scales**. Future **possibilities** for water availability may also be explored.

For 5–6 marks

Expect a weakly-evidenced outlining of how the growth of the middle class impacts water availability in one or more contexts.

For 7–8 marks

Expect a well-structured account, which includes:

- either a well-evidenced synthesis which links together several ideas 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 most effective way to manage resources sustainably is through the circular economy.”
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 circular economy – A circular economy entails markets that give incentives to reusing products, rather than scrapping them and then extracting new resources. In such an economy, all forms of waste, such as clothes, scrap metal and obsolete electronics, are returned to the economy or used more efficiently. This can provide a way to not only protect the environment, but use natural resources more wisely, develop new sectors, create jobs and develop new capabilities. Candidates should develop the elements of circular economy to show how this manages resources in a sustainable fashion.
- Responses may also show an understanding of resource management through the classic theories of population and resources – these could develop the theories of Malthus, with management examined in a pessimistic view, or Boserup which is more optimistic. The links between population and resources for each one could be explained and examined in the context of sustainability.
- Responses may also show an understanding of resource management through the sustainable development goals. Answers may refer to specific SDGs such as responsible consumption and production, zero hunger and climate action and develop how following the goals can lead to resource sustainability. This can be addressed at a variety of levels from local to global.
- When considering the extent of agreement candidates could adopt a variety of approaches. Some may review the relative importance of different elements of the circular economy, other approaches may evaluate the circular economy against other methods such as population control or expansion of resources. Some answers may look at scale and examine the alternative approaches at different levels.

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3) which focuses on the relative approaches to sustainable management of resources. Responses may address relevant key concepts in their discussion.

For 5–6 marks

Expect a weakly-evidenced outlining of the management of resources sustainably through the circular economy in one or more contexts

For 7–8 marks

Expect a well-structured account, which includes:

- either a well-evidenced synthesis which links together several ideas 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.
