Anglo-Chinese School
(Independent)

PRELIMINARY EXAMINATION 2025
IB DIPLOMA PROGRAMME
YEAR 6 (IBDP 2)

Geography
Higher level & standard level
Paper 2

SUGGESTED ANSWER SCHEME

Wednesday 17 September 2025 **1 hour 15 minutes**

Instructions to candidates

- Write your class and candidate number on this cover page.
- Do not open this examination paper until instructed to do so.
- Section A: answer all questions.
- Section B: answer the question.
- Section C: answer one question.
- Answers must be written within the answer boxes provided.
- The accompanying **geography resource booklets** are required for this examination paper.
- The maximum mark for this examination paper is [**50 marks**].

Class: ……

Candidate number

0	**0**	**2**	**3**	**2**	**9**				

	Marks
Section A	**/30**
Section B	**/10**
Section C	**/10**
Total	**/50**

Section A

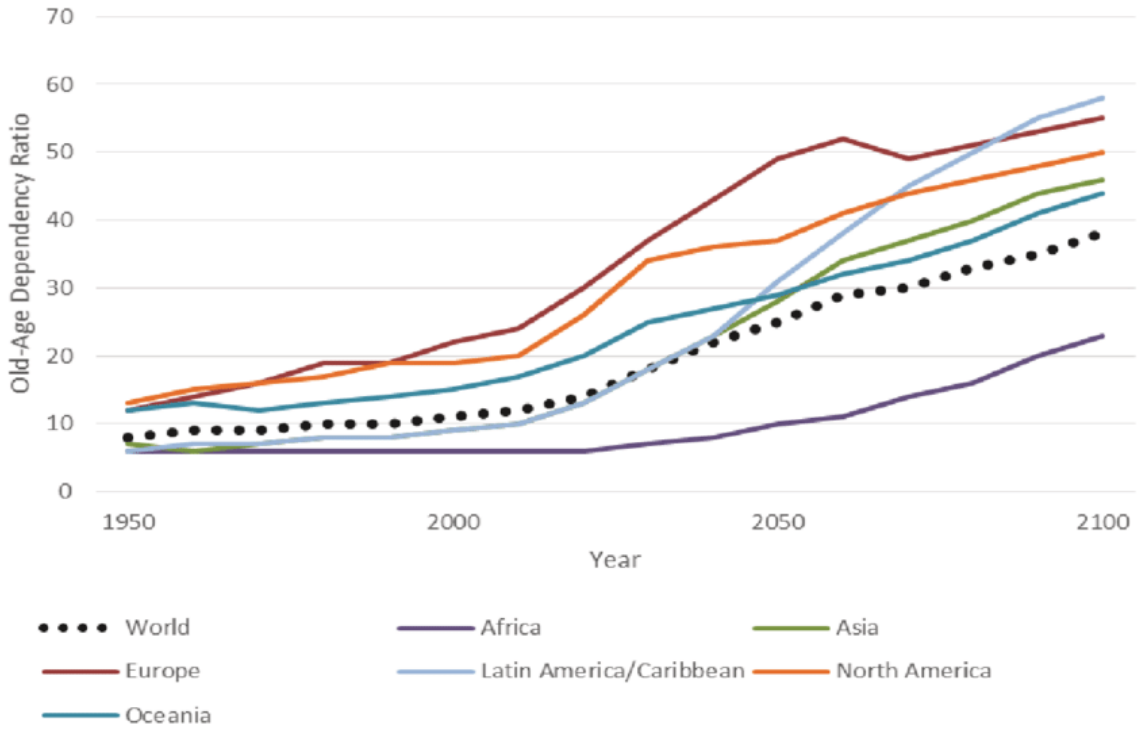
Answer **all** questions.

Answers must be written in the boxes provided.

When relevant, answers should refer to case studies or examples, and where appropriate include well-drawn maps or diagrams.

1. Changing population

The graph shows observed and projected old-age dependency ratios from 1950 to 2100, in percentage.



(a) State the old-age dependency ratio for Asia in the year 2000. [1]

10%

(b) State which region has the greatest projected increase in old-age dependency ratio between 2010 and 2040. [1]

Latin America/Caribbean [from about 10% in 2010 to about 35% in 2040].

(c) Explain **one** reason why the old-age dependency ratio of a region could decrease. [2]

In each case award [1] for identification of a valid reason with a further [1] for development/exemplification.

For example:

- Increased inward migration of working-age adults [1], e.g. Gulf states attract large numbers of young migrant workers, lowering the proportion of elderly dependents [1].

Other possibilities include:

- Higher birth rates increasing the proportion of working-age people.
- Later retirement age keeping more older people economically active.
- Outward migration of elderly people to other regions/countries.
- High mortality rates among elderly populations reducing their proportion.
- Improved healthcare for younger age groups increasing their share of the population.

(d) Suggest **one** way in which a demographic dividend can bring economic benefits to a country. [2]

Award [1] for a valid economic benefit and [1] for development (at a national level).

Possibilities include:

- The "bulge" in the adult population leads to a high number of economically active people paying taxes [1], benefitting the overall economy / GDP of the country [1].
- More economically active adults than elderly dependents [1] means that less governmental tax income will go towards e.g. pensions/care homes [1].
- A lower number of young dependents than economically active people [1] will incur less cost for education [1].
- More people in the economically active sector gives a market for goods/services [1] this will stimulate industrial activity [1].
- Increase in labour supply [1] attractive for MNCs/industrial investment/boost to national productivity.

(e) Explain **one** political and **one** environmental push factor which lead to forced migration. [2+2]

Award [1] for the specific political or environmental push factor and [1] for development/exemplification explaining how it leads to forced migration.

For example:

- Political: Civil war or armed conflict [1], e.g. in Syria, violence and insecurity have forced millions to flee to neighbouring countries [1].
- Environmental: Crops fail due to prolonged drought [1], leading to food insecurity and loss of livelihood, forcing people to migrate [1].

Other possibilities include:
Political

- Political persecution or discrimination against minority groups.
- Oppressive government policies or human rights abuses.
- Forced conscription into armed forces.

Environmental

- Homes destroyed by extreme weather events such as cyclones.
- Sea level rise flooding low-lying coastal areas.
- Wildfires destroying settlements and agricultural land.

2. Global climate – vulnerability and resilience

Refer to the map on page 2 of the accompanying resource booklet.

The map shows the locations and apparent temperatures (heat index) recorded in selected South-east Asian cities during an extreme heatwave event in 2024.

(a) Describe the distribution of the apparent temperatures (heat index) in South-east Asian cities on 30 April shown in the map. [2]

Describe the distribution of the apparent temperatures (heat index) in South-east Asian cities on 30 April shown in the map. [2]
Award [1] for a valid description of the overall pattern and [1] for development with specific supporting data.

For example:

- Highest apparent temperatures are in mainland South-east Asia [1], e.g. Vientiane at 47°C, Phnom Penh at 44°C and Bangkok at 43°C [1].

Other possibilities include:

- Coastal and island cities generally record lower apparent temperatures, e.g. Kuala Lumpur at 38°C, Singapore and Jakarta at 40°C.
- Inland cities tend to have higher apparent temperatures than coastal ones.
- Temperatures above 40°C are recorded in most locations except Kuala Lumpur.
- Northern mainland cities (e.g. Hanoi, Vientiane) experience higher values than southern island locations.

(b) Suggest **two human** factors that can increase vulnerability to extreme heat events in South-east Asia. [2+2]

Award [1] for a valid human factor and a further [1] for development.
Do NOT award a mark for physical factors.

For example:

- Lower income levels [1], as poorer households may not be able to afford air conditioning or heat-resilient housing, increasing risk of heat-related illness [1].

- Occupation of the population [1], e.g. agricultural and construction workers are exposed to high outdoor temperatures for long hours, raising the risk of heat stress [1].

Other possibilities include:

- High population density in urban areas increasing the urban heat island effect.
- Ageing populations being more physiologically vulnerable to heat.
- Limited public awareness or education on heat-health risks.
- Inadequate government investment in heat-mitigation measures such as shaded public spaces.
- Gender profile/women more vulnerable due to unequal access to resources or healthcare.
- Populations displaced or in conflict situations with limited shelter or cooling access.

(c) Explain **one** government-led strategy and **one** civil society-led strategy to reduce the causes of global climate change. [2+2]

Award [1] for a valid strategy and a further [1] for development/exemplification explaining how it reduces the causes of climate change.

For example:

- Government-led strategy: Implementation of carbon taxes [1], e.g. Singapore's carbon tax of S$25 per tonne in 2024 incentivises companies to reduce greenhouse gas emissions [1].
- Civil society-led strategy: Campaigns to promote plant-based diets [1], e.g. WWF's "Meat Free Monday" reduces demand for livestock farming, which lowers methane emissions [1].

Other possibilities include:
Government-led

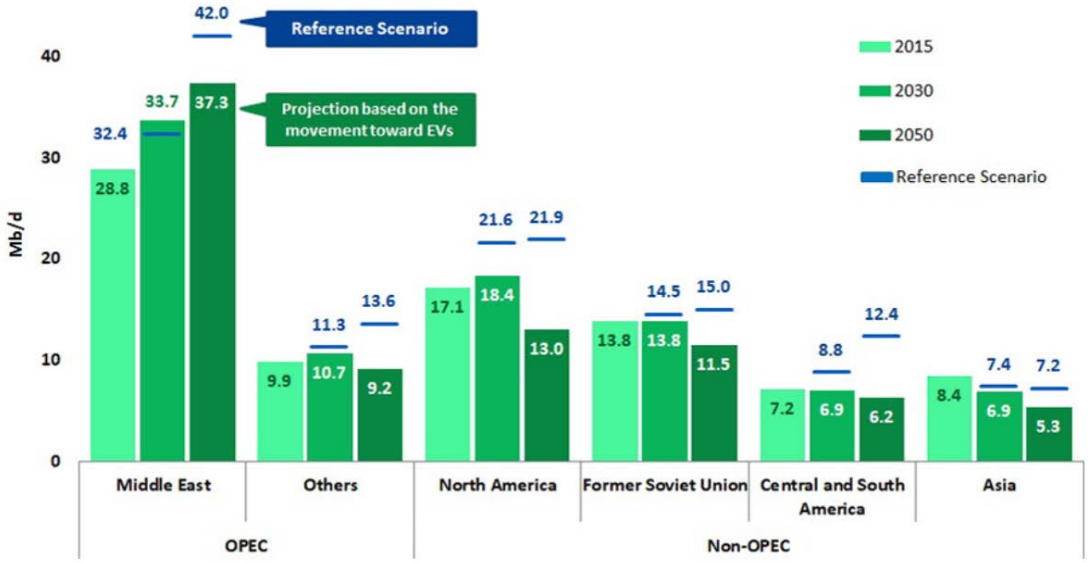
- Subsidies for renewable energy projects.
- Mandating fuel efficiency standards for vehicles.
- Banning coal-fired power stations.

Civil society-led

- NGO-led reforestation programmes.
- Public awareness campaigns on energy conservation.
- Community solar power cooperatives.

3. Global resource consumption and security

The graph shows global oil production by region in 2015, projected levels for 2030 and 2050, and a reference scenario for 2050.



Note: From left to right, historical for 2015, projection for 2030 and projection for 2050.
Source: Created based on the IEEJ Outlook 2018 published by the Institute of Energy Economics, Japan

(a) Contrast the projected oil production trends of the Middle East and North America from 2015 to 2050. [2]

The Middle East is projected to increase oil production from about 32.4 Mb/d in 2015 to 37.3 Mb/d in 2050 [1], whereas North America is projected to decline from about 17.1 Mb/d in 2015 to 13.0 Mb/d in 2050 [1].

(b) Explain **one** way in which meeting a nation's food needs could result in reduced energy availability. [2]

Award [1] for a valid reason and [1] for further development.

For example:

- Increased irrigation for agriculture [1] – water diverted for crop production reduces water available for hydropower generation, lowering energy supply [1].

Other possibilities include:

- Use of biomass crops for food instead of biofuel production reduces renewable energy generation.
- Increased fertiliser production for agriculture uses significant energy resources.
- Expansion of cold storage and food processing facilities increases national energy demand, leaving less available for other sectors.

(c) Suggest one reason why a country may exceed its biocapacity. [2]

Award [1] for a valid reason and [1] for further development.

For example:

- High levels of resource consumption [1] – rapid industrialisation and urbanisation increase demand for energy, food, and materials beyond the country's ability to regenerate them [1].

Other possibilities include:

- Large population size creating high demand for resources.
- Dependence on fossil fuels leading to high carbon emissions that exceed the environment's absorption capacity.
- Intensive agriculture depleting soils faster than they can recover.
- Deforestation reducing the area available for carbon absorption and resource renewal.

(d) Explain **two** ways in which the development of different resources supports Boserup's optimistic view on population–resource relationships. [2+2]

Award [1] for each valid understanding of the Boserup approach and [1] for development to show how it impacts on resource availability.

For example:

- Development of renewable energy technologies [1] – increased use of solar, wind, and hydropower provides sustainable energy sources, supporting economic growth and meeting the needs of a growing population [1].
- Innovation in agricultural techniques [1] – advancements such as hydroponics and vertical farming increase food production efficiency, allowing more food to be produced from limited land to support a larger population [1].

Other possibilities include:

- Genetic modification of crops to increase yields and resist pests/disease.
- Desalination technology to provide fresh water for irrigation and consumption.
- Recycling and circular economy approaches to extend the life of materials and reduce waste.
- Development of alternative proteins (e.g. cultured meat, plant-based substitutes) to reduce pressure on land and water resources.
- Precision agriculture using drones and sensors to optimise resource use and reduce waste.

Section B

Answer the following question.

4. Refer to the infographic on page 3 of the accompanying resource booklet.

The infographic shows projected impacts of climate change on crop, pasture, and fishery yields in the 2030s, and key adaptation strategies for small-scale producers.

(a) (i) Determine the projected percentage decline in wheat yield in North-East Brazil. [1]

14%

(ii) Identify the region with the smallest projected decline in any crop or pasture yield. [1]

East Africa [Decrease of 1.5% for bean]

(b) Suggest another graphical method that could depict the differences in **projected yield declines across regions**, giving a reason for your choice. [2]

Award [1] for a valid graphical method and [1] for a reason.

For example:

- Choropleth map shading each region by percentage decline [1], because it clearly shows spatial variation and allows quick comparison between regions [1].

Other possibilities include:

- Grouped/clustered bar chart by region and crop.
- Proportional symbol map with symbol size proportional to % decline.

(d) To what extent does the infographic present a balanced picture of the challenges and opportunities for small-scale producers adapting to climate change? [6]

Award [1] for each valid point supported by evidence taken from the infographic and/or development of a valid point, 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.

Challenges:

- Projected declines in key crop yields in various regions (e.g. wheat −14% in NE Brazil, rice −10% in Central America) [1].
- Declines in pasture yield for livestock in New Zealand (−4% for beef and dairy) [1].
- Small-scale producers in poorer countries may have fewer assets, making adaptation more difficult [1].
- Impacts are uneven, with tropical regions likely to suffer more severe losses than temperate regions [1].

Opportunities:

- Adaptation strategies for crops, livestock, and fisheries are presented (e.g. switching crop varieties tolerant to drought, matching animal numbers to pasture) [1].
- Technological and management improvements (e.g. optimising irrigation, restoring coastal ecosystems for fisheries) could mitigate yield declines [1].
- Strategies can improve long-term sustainability and resilience for small-scale producers [1].

For example:
The infographic shows significant challenges for small-scale producers, with crop yield declines of up to 14% for wheat in NE Brazil and reduced pasture yields in New Zealand [1]. It also highlights the vulnerability of producers with fewer assets in poorer countries [1]. On the other hand, it outlines several opportunities through adaptation measures, such as switching to drought-tolerant varieties and matching animal numbers to pasture [1], which could improve resilience [1]. While the infographic presents both challenges and opportunities, it emphasises adaptation strategies more heavily than the scale of the challenges, suggesting a slightly optimistic bias [1]. Overall, it presents a reasonably balanced picture but with a stronger focus on potential solutions [1].

Section C

Answer **one** question.

Where relevant, answers should refer to case studies or examples, and where appropriate include well-drawn maps or diagrams.

5. "Pro-natalist policies are the most effective solution to the challenges of an ageing population." To what extent do you agree with this statement? [10]

A good response should demonstrate understanding of pro-natalist policies, which aim to encourage higher birth rates through financial incentives, parental leave, subsidised childcare, housing benefits, and other family support measures. The response should explain how these policies address the demographic, economic, and social challenges of an ageing population, and also critically assess their relative effectiveness compared to alternative solutions (e.g. immigration, automation, pension reform).

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

Ways pro-natalist policies may effectively address ageing population challenges:

- Increasing the working-age population – higher birth rates reduce the old-age dependency ratio over time.
- Sustaining economic growth – more workers to support tax revenues and economic productivity.
- Maintaining pension and healthcare systems – larger future workforce helps fund social services for the elderly.

- Long-term demographic stability – supports balanced age structure over generations.
- Examples – France's generous family allowances and subsidised childcare, Singapore's Baby Bonus scheme.

Limitations and alternative approaches:

- Time lag – benefits take decades to materialise, while ageing challenges are immediate.
- Cost and sustainability – high fiscal burden of subsidies and benefits.
- Uncertain impact on fertility – cultural, social, and economic factors may still limit birth rates (e.g. Japan, South Korea).
- Alternative strategies – encouraging immigration to supplement the workforce, raising retirement age, investing in automation to reduce reliance on human labour, promoting healthy ageing to reduce care costs.
- Potential social resistance – reluctance to expand immigration or change cultural norms on family size.

For 5–6 marks
Expect general explanation of how pro-natalist policies work and why they may address ageing population challenges. May lack reference to limitations or alternative solutions.

For 7–8 marks
Expect a structured discussion that covers both strengths and limitations, with examples. Some awareness of alternative strategies and recognition of context-specific factors influencing effectiveness.

For 9–10 marks
Expect a well-supported and balanced evaluation of whether pro-natalist policies are *the most effective* solution, with critical comparison to other approaches. Recognises variation in success across countries and the interplay of cultural, economic, and policy factors.

6. "The circular economy is the most sustainable way to balance population and resource use." To what extent do you agree with this statement? [10]

A good response should demonstrate understanding of the circular economy as a system in which resource input, waste, emissions, and energy leakage are minimised by slowing, closing, and narrowing material and energy loops. The response should explain how circular economy practices could help balance population demands with sustainable resource use, and may also critically assess whether this is the *most* sustainable approach compared to alternatives (e.g. resource stewardship, technological innovation, population control policies).

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

Ways the circular economy supports balancing population and resource use:

- Resource efficiency – reuse, recycling, and remanufacturing reduce demand for virgin resources despite population growth.

- Decoupling economic growth from resource extraction – allows more people to enjoy higher living standards without proportional increases in environmental impact.
- Extended product lifespans – durable and repairable goods reduce per capita material throughput.
- Waste reduction – minimises landfill and pollution impacts even with larger populations.
- Localised production and repair networks – reduce transport emissions and create sustainable jobs to serve growing populations.
- Reduced pressure on ecosystems – limits deforestation, mining, and overfishing despite higher population demand.

Possible limitations or challenges:

- Implementation costs – establishing circular systems requires high investment, which may be unfeasible in lower-income countries with fast-growing populations.
- Behavioural and cultural barriers – consumer habits and "throwaway culture" can slow adoption.
- Technological constraints – not all materials can be fully recycled or looped efficiently.
- Global inequalities – benefits may be concentrated in developed nations while poorer countries remain in linear economies.
- Population growth outpacing efficiency gains – circular economy may slow but not fully offset increased consumption.

For 5–6 marks

Expect general explanation of how circular economy principles can improve sustainability, with some reference to population-resource balance. Likely to cover either benefits or limitations, but not both.

For 7–8 marks

Expect a structured response addressing both benefits and limitations, with supporting examples. Shows some understanding of population-resource pressures and how circular systems can address them.

For 9–10 marks

Expect a well-supported and balanced discussion with clear critical evaluation of whether the circular economy is indeed *the most sustainable* approach. May compare with alternative strategies (e.g. demographic policies, renewable energy transition) and recognise limitations in different global contexts.