

Cambridge O Level

GEOGRAPHY**2230/01**

Paper 1 Geographical Themes

October/November 2025

MARK SCHEME

Maximum Mark: 75

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the October/November 2025 series for most Cambridge IGCSE, Cambridge International A and AS Level components, and some Cambridge O Level components.

This document consists of **34** printed pages.

PUBLISHED**Generic Marking Principles**

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptions for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

PUBLISHED**GENERIC MARKING PRINCIPLE 5:**

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Annotations guidance for centres

Examiners use a system of annotations as a shorthand for communicating their marking decisions to one another. Examiners are trained during the standardisation process on how and when to use annotations. The purpose of annotations is to inform the standardisation and monitoring processes and guide the supervising examiners when they are checking the work of examiners within their team. The meaning of annotations and how they are used is specific to each component and is understood by all examiners who mark the component.

We publish annotations in our mark schemes to help centres understand the annotations they may see on copies of scripts. Note that there may not be a direct correlation between the number of annotations on a script and the mark awarded. Similarly, the use of an annotation may not be an indication of the quality of the response.

The annotations listed below were available to examiners marking this component in this series.

Annotations

Annotation	Meaning	Use
	Correct point	Point–marked questions only
	Incorrect	Point–marked questions only
	Reserve mark	Point–marked questions only
	Just	Point–marked questions only
	Level 3	Levels–marked (7–mark) questions only
	Level 2	Levels–marked (7–mark) questions only
	Level 1	Levels–marked (7–mark) questions only
	Level 0 – No creditable response	Levels–marked (7–mark) questions only
Highlighter	Creditworthy part of an extended response	Levels–marked (7–mark) questions only
	Highlighting a significant part of an extended response – to be used with another annotation e.g.  or 	Levels–marked (7–mark) questions only

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Annotation	Meaning	Use
EVAL	Evaluative point	Levels–marked (7–mark) questions only
^	Omission or further development/detail needed to gain credit	All questions
?	Unclear or validity is doubted	All questions
REP	Repetition	All questions
DEV	Developed point	All questions
EG	Appropriate example or case study	All questions
BOD	Benefit of doubt	All questions
TV	Too vague	All questions
IRRL	Irrelevant	All questions
NAQ	Material that does not answer the question	All questions
SEEN	1. Diagram or essay plan has been seen but no specific credit given 2. Additional page has been checked	1. Any diagrams or essay plans 2. All blank pages in the provided generic answer booklet and/or extension answer booklet(s).
R	Rubric error	Place at start of question not being credited

PUBLISHED**2230/01 (Geographical Themes) – Levels of Response Marking**

Using the principle of 'best-fit' and the level descriptors:

- decide which level best describes the overall quality of the response
- annotate the script at the end of the response with the level annotation
- award a mark for the relative position of the response within that level

Level	Marks	Descriptors
Level 3 L3	6–7	Responses at this level: <ul style="list-style-type: none"> • demonstrate a good knowledge and understanding of the content • use detailed example(s) which are relevant and integrated effectively • make a clear argument using well-reasoned judgements • provide a clear conclusion/decision
Level 2 L2	3–5	Responses at this level: <ul style="list-style-type: none"> • demonstrate a sound knowledge and understanding of the content • use example(s) which are relevant and have some detail • make an argument using some reasoned judgements • provide a basic conclusion/decision
Level 1 L1	1–2	Responses at this level: <ul style="list-style-type: none"> • demonstrate a basic knowledge and understanding of the content • use example(s) which are generic or in name only • make an attempt at a basic argument • provide a yes/no statement
Level 0 0	0	No creditable response

Theme 1: Population and settlementAnswer **one** question from this theme.**EITHER**

Question	Answer	Marks	Guidance
1(a)(i)	Define the term ‘international voluntary migration’. Movement from one country to another (Reserve) Own free will/their own choice/decided to move/not forced Economic needs/job opportunities/education/healthcare opportunities	2	2 × 1 = 0 Volunteer themselves
1(a)(ii)	Explain <u>two</u> positive impacts on an origin country due to international migration. <u>Remittances are sent back to the families</u> Families have more money to spend/standard of living improves <u>Less pressure on resources/food/water/education/healthcare</u> Less famine/malnutrition/less disease from dirty water/more educated people <u>Less competition for employment/unemployment rates fall/more employment opportunities</u> People earn more money/quality of life improves/higher salary/less poverty/standard of living improves <u>Less pressure on the environment/land/less air/noise/water pollution</u> Traffic congestion falls/not as much land required for agriculture <u>People may later return home with new skills/higher education</u> This leads to economic development within the country	4	2 × 2 2 marks for identifying the positive impacts 2 marks for developing the points = 0 More jobs Less people in a country Less overcrowding Prices get lower Tourism increases Avoid overpopulation Less rubbish Less crime More job opportunities – not just more jobs Higher income must be linked to jobs 1 mark for the underlined part and 1 mark for the part underneath – do not need the underlined part to get the next point

Question	Answer	Marks	Guidance
1(b)(i)	<p>Calculate the difference in birth rate per 1000 people between the UK and China.</p> <p>3.4 (per 1000 people)</p>	1	
1(b)(ii)	<p>Suggest reasons for the falling birth rate in China.</p> <p>One-child policy Cost of having children/high cost of living Availability/affordability/education on family planning/birth control Low infant mortality rate High youth unemployment rate Delay in marriage/do not want to get married Lack of childcare Female employment/pursue career Female education Ageing population Fewer children needed to work (in the rural workforce)</p>	3	3 × 1

Question	Answer	Marks	Guidance
1(b)(iii)	<p>Do you think that the falling birth rate in China will be a problem for the country in the future? Give <u>two</u> reasons for your answer.</p> <p><u>Yes</u> Less working population/shortage of workers Less taxes being paid to the government Resources not used/underpopulation Problems linked to migration Increased dependency ratio/ageing population Less people in the armed forces/to defend the country Stress on one child of looking after/supporting parents/grandparents Less buyers/consumers Gender imbalance</p> <p><u>No</u> Less pressure on resources/food/water/currently overpopulated Less pressure on education/healthcare Less pressure on jobs/there are already lots of workers Lower levels of named pollution/less traffic congestion</p>	2	<p>2 × 1</p> <p>No mark for simply stating yes/no</p> <p>= 0 Problems of the One-child policy</p> <p>= 0 Cost of school will not increase Cost of living will not increase</p>
1(c)(i)	<p>State the <u>two</u> pieces of data needed to calculate the natural population growth of Brunei shown in Fig. 1.2.</p> <p>Birth rate <u>and</u> death rate/BR – DR</p>	1	
1(c)(ii)	<p>Describe how the natural population growth rate of Brunei changed between 1950 and 2020.</p> <p>Overall decrease/fall/decline From 3.1% to 0.9% By 2.2% 1950–1957/58 increase 1957/58–2020 decline/fluctuating decline/from 3.7%–0.9% 1960–1970/1990–2020 rapid decline (allow dates in between)</p>	3	<p>3 × 1</p> <p>Needs percentage once in the answer</p>

Question	Answer	Marks	Guidance
1(d)(i)	<p>Suggest <u>two human</u> reasons for a shortage of home-produced food in Brunei.</p> <p>Lack of labour supply/shortage of people in rural areas/lack of interest in farming Only 1–4% of the workforce of Brunei is employed in agriculture Rural to urban migration/young people migrate to urban areas Higher paid jobs in urban areas/lower pay in agriculture Manual work in rural areas/less physically demanding in urban areas Hot climate/airconditioned offices Restrictions on fishing/quotas Reliance on imports of food</p>	2	<p>2 × 1</p> <p>= 0</p> <p>Physical factors such as relief/soil Overfishing Climate change No land/less land People want high paying jobs – where No knowledge of cooking Demand for fast food Inexperienced workers Part-time working on the land</p>
1(d)(ii)	<p>Describe <u>two</u> strategies used to increase agricultural production in Brunei. Evaluate the effectiveness of these strategies in increasing agricultural production in Brunei. Give examples to support your answer.</p> <p>Content Guide</p> <p><u>Answers are likely to refer to:</u></p> <p>Government strategy is to increase self-sufficiency/food security Government strategy to increase poultry production Government encouraging livestock farming Develop new knowledge/ideas/more technology/machinery/drones Government developed the Brunei Agro-Technology Park Encouraging the production of food for sale/exports Farmers are encouraged to form cooperatives Invest in modern techniques/research and development, e.g. hydroponics Education to encourage young people to engage in farming Subsidies for rice planting/harvesting machines/fertilisers/pesticides Focus still on other elements of economy such as oil/tourism</p>	7	<p>There must be descriptive reference to the two strategies. An evaluation commenting on how effective these strategies are in increasing agricultural production in Brunei is also essential.</p> <p>Examples – dates/locations within Brunei/links with other countries/data to support points, etc.</p> <p>Levels marking</p> <p>Please ensure that you refer to the Levels of response marking section at the front of the mark scheme before marking this question.</p> <p>One strategy – Max. 4 marks</p>

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Question	Answer	Marks	Guidance
1(d)(ii)	<p><u>More developed answers are likely to refer to:</u></p> <p>To achieve greater self-sufficiency, the government announced in March 2013 that 1000 ha of land will be developed for livestock breeding or the farming of animals.</p> <p>In 2012, Brunei started cooperating with Vietnam to develop a model for the farming of cattle on a large-scale.</p> <p>Research was conducted jointly with the Philippines Research Institute to develop a local rice variety that is suitable for the growing conditions in Brunei.</p> <p>The establishment of the Brunei Agro-Technology Park located in Kampong Tungku will focus on research and development and develop high technology agriculture.</p> <p>Infrastructural developments – building farm roads/irrigation/drainage</p> <p>Research centre for commercialisation, product testing and halal certification as well as the Halal Science Centre and the Food Development Centre.</p> <p>Commercial farming will raise the standard of living and the quality of life of farmers and encourage more young people to farm.</p> <p>Commercial farming will also produce products that can be processed for both the local and overseas markets.</p> <p>Agricultural areas such as Batumpu have been developed as areas for commercial farming.</p> <p>Farmers are trained to use high technology systems to produce high yields and to market their products.</p> <p>Farmers are encouraged to group together to form cooperatives in order to market their outputs.</p> <p>They are also encouraged to add value to the processing of their outputs.</p>		

OR

Question	Answer	Marks	Guidance
2(a)(i)	<p>Give <u>two</u> reasons for urbanisation.</p> <p>Rural–urban migration Natural increase/rapid population growth in the city Lack of jobs in rural areas Entertainment facilities Better educational opportunities Better medical facilities</p>	2	<p>2 × 1</p> <p>Allow Any correct push/pull factor but do not credit reverse statements</p> <p>= 0 Better standard of living/quality of life</p>
2(a)(ii)	<p>Suggest <u>two</u> opportunities and <u>one</u> problem that is associated with urban growth shown in Fig. 2.1.</p> <p><u>Opportunities</u> Jobs/employment/income Examples of jobs such as taxi drivers/cashiers/working in shops/market stalls Range of goods/services available/variety of shops and stalls Public transport available Access to financial facilities Opportunities to meet and interact with people/integrate with people</p> <p><u>Problems</u> Traffic congestion/risk of accidents Air pollution Noise pollution</p>	3	<p>2 × 1 opportunities 1 × 1 problem</p> <p>= 0 Better standard of living Increase in transport networks/road development/accessibility of roads Different cultures – need the link to what the opportunity is</p> <p>= 0 Overcrowding</p>

Question	Answer	Marks	Guidance
2(a)(iii)	<p>Explain how the following factors have contributed to counter-urbanisation: A affluence (greater wealth) B environment.</p> <p><u>Affluence (greater wealth)</u> (Increased) car ownership/can afford to buy their car Can afford to commute (Can afford) large house/garden Farmers increase their income by selling off land for housing developments</p> <p><u>Environment</u> Less air pollution/cleaner air in rural areas Rural areas have less noise pollution/quieter/peaceful Beautiful scenery/more natural/closer to nature</p>	4	<p>Reserve 1 mark for each of the factors</p> <p>Question related to HICs</p> <p>= 0 People want a healthy lifestyle Safe place Less congested Less crime Less disease More relaxing</p>
2(a)(iv)	<p>State <u>two</u> negative environmental impacts in a rural area affected by counter-urbanisation.</p> <p>Deforestation Damage to wildlife/damage to habitats/ecosystems More air pollution/more water pollution/land pollution Loss of scenery/visual pollution More impermeable surfaces and increased run off which can lead to flooding</p>	2	<p>2 × 1</p> <p>= 0 More litter Increase in temperature Overpopulation Decrease in land available</p>
2(b)(i)	<p>Define the term ‘quality of life’.</p> <p>Overall well-being of people/quality of life refers to the wellbeing of individuals or groups of people/people who are contented, healthy and have their basic needs met</p>	1	<p>= 0 How good their life is The way people live their life Standard of living</p>

Question	Answer	Marks	Guidance
2(b)(ii)	<p>List the countries shown in Fig. 2.2 in rank order from the highest (1) to the lowest (6) spending on education as a percentage of their GDP.</p> <p>Correct rank order</p>	2	<p>2 marks = 5/6 correct 1 mark = 2/3/4 correct</p>
2(b)(iii)	<p>Suggest reasons to explain how spending on education can increase life expectancy.</p> <p>People are educated about the type of food to eat/balanced diet Importance of exercise More doctors/nurses trained More medicines/vaccinations available/better treatments Increased knowledge about how to prevent diseases/better knowledge of healthcare Less physically demanding jobs Education gets jobs that are better paid <u>so</u> can afford better housing/diet/healthcare (max. 2 marks) More knowledge on how to deal with natural disasters</p>	4	<p>4 × 1</p> <p>= 0 Get jobs Get jobs in tertiary sector Increased income</p>

Question	Answer	Marks	Guidance
2(b)(iv)	<p>Describe <u>two</u> strategies used to improve the quality of life in LICs (low income countries). Evaluate the effectiveness of these strategies in improving the quality of life in LICs. Give examples to support your answer.</p> <p>Content Guide</p> <p><u>Answers are likely to refer to:</u></p> <p>Better education, e.g. universal primary education Better healthcare, e.g. reduces childhood mortality/combat disease Improve access to clean water and sanitation Improve access to food Reduce poverty Improve gender equality Countries work together on common goals Achieve Millennium Development Goals (MDGs) Role of the World Bank/Asian Development Bank (ADB) The importance of charities Environmental sustainability, e.g. reduce deforestation, reduce greenhouse gas emissions</p> <p><u>More developed answers are likely to refer to:</u></p> <p>All 193 United Nations member states and at least 23 international organisations have agreed to work together to achieve the 8 Millennium Development Goals (MDGs). Achieving the goals is difficult – e.g. universal primary education for all; although there has been an increase in school attendance there is also a high drop-out rate as poor children are needed to help out on the farm or earn income. Education may be free but there can be hidden costs such as food, transport and school attire.</p>	7	<p>There must be descriptive reference to the two strategies. An evaluation commenting on how effective these strategies are in improving quality of life in LICs is also essential.</p> <p>Examples – named LIC/reference to UN/World Bank/named charity/MDG</p> <p>Levels marking</p> <p>Please ensure that you refer to the Levels of response marking section at the front of the mark scheme before marking this question.</p> <p>One strategy – Max. 4 marks</p>

Question	Answer	Marks	Guidance
2(b)(iv)	<p>The quality of education delivered may be of a low standard due to large classes and insufficient or unskilled teachers.</p> <p>Through low interest loans, interest free credits and grants the World Bank aims to fight poverty in LICs.</p> <p>The ADB is a financial institution like the World Bank but with a focus on improving the quality of life of the people in Asia and the Pacific.</p> <p>Charities are non-profit organisations that focus on educational, religious or other activities that provide help to those in need.</p> <p>World Vision is a charity that works with children, families and communities to reduce poverty.</p> <p>Oxfam works to improve Fair Trade where fair prices are paid to producers to LICs.</p>		

Theme 2: The natural environmentAnswer **one** question from this theme.**EITHER**

Question	Answer	Marks	Guidance
3(a)(i)	<p>Describe the <u>overall</u> pattern of temperature and rainfall in Kuala Belait shown in Fig. 3.1.</p> <p><u>Temperature</u> High/constant/same all year round/hot/small temperature range/temperature range between 1–2°C/ 26–27/28°C</p> <p><u>Rainfall</u> Fluctuates/varies/small changes over the year High rainfall Increases Rainfall every month</p>	2	<p>2 × 1</p> <p>Reserve 1 mark for each</p> <p>= 0 Evenly distributed every month</p>
3(a)(ii)	<p>Identify the word from Fig. 3.2 which describes the relative humidity in Brunei.</p> <p>High</p>	1	<p>= 0 Two words</p>
3(a)(iii)	<p>Describe the clouds in the area shown in Fig. 3.3.</p> <p>Large amount of cloud cover/a lot of clouds/6/7 oktas White Fluffy clouds/cotton wool type Cumulus clouds Low level</p>	2	<p>2 × 1</p> <p>= 0 Big Thick</p>
3(b)(i)	<p>Name the type of weathering described in Fig. 3.4.</p> <p>Biological</p>	1	

Question	Answer	Marks	Guidance
3(b)(ii)	<p>Explain how the following factors affect the type of weathering: A geology B relief.</p> <p><u>Geology</u> Some rocks weather more easily than others Sandstone weathers more easily than granite The presence of iron in rocks causes them to weather more quickly The mineral calcite present in limestone is vulnerable to chemical weathering Sedimentary rocks have more joints and cracks This means these rocks weather more easily Some rock types such as chalk and limestone are more easily weathered by chemical weathering As these rocks dissolve in weak acids</p> <p><u>Relief</u> As relief increases temperature decreases so this can result in freeze–thaw weathering/frost shattering As relief increases the soils become thinner and so this results in biological weathering</p>	4	<p>Reserve 1 mark for each of geology and relief</p> <p>Allow development</p>
3(c)(i)	<p>Tropical rainforests are often described as the ‘green lungs of the Earth’. Explain what this statement means.</p> <p>Take in/absorb carbon dioxide Breathe out/release oxygen/source of oxygen in the atmosphere Through the process of photosynthesis Maintains the CO₂/O₂ balance in the atmosphere Maintain air quality</p>	2	2 × 1
3(c)(ii)	<p>Describe the <u>overall</u> change in the rate of deforestation in the Amazon rainforest between 2004 and 2021 shown in Fig. 3.5.</p> <p>Decrease 28 000 km² to 13 000 km² By 15 000 km²</p>	2	<p>2 × 1</p> <p>Units must appear once in the answer</p>

Question	Answer	Marks	Guidance
3(c)(iii)	<p>Explain why rainforests are being cut down for the building of settlements and the building of dams.</p> <p><u>Building of settlements</u> Increase population pressure/population growth/more people Overcrowded areas Forest land cleared for housing Expansion of towns/cities Preference to build on greenfield sites Timber is used for building Rainforests often have timber/mining industries, so land is cleared for the workers of these industries to live there</p> <p><u>Building of dams</u> Large areas required/lack of space available Control flooding Reservoirs to store water for water supply Generation of HEP</p>	4	<p>Reserve 1 mark for each of the factors</p> <p>= 0 Lots of rivers there</p>

Question	Answer	Marks	Guidance
3(c)(iv)	<p>Two strategies used to conserve and manage tropical rainforests are ecotourism and fire control. Describe these <u>two</u> strategies and evaluate how effective they are in conserving and managing tropical rainforests. Give examples to support your answer.</p> <p>Content Guide</p> <p><u>Answers are likely to refer to:</u></p> <p>Ecotourism does not damage the environment Ecotourism gives economic incentive for conservation Ecotourism raises awareness of importance of tropical rainforests Ban on clearing forests by fire Raising awareness with the local communities of the danger of unmanaged fires Fire control – early detection, educates local communities on slash and burn, firebreaks</p> <p><u>More developed answers are likely to refer to:</u></p> <p>Ecotourism encourages tourists to see the tropical rainforest in its natural state and appreciate the true value of nature and the importance of protection. In 1995, the Indonesian government imposed a ban on clearing forests by fire. The government also introduced the Integrated Forest Fires Protection System (1994) and a National Fire Management Plan (1999) to monitor and manage forest fires. Education campaigns aim to discourage villagers living in or near forested areas from using fire to clear forests for farmland. Kuala Belalong Field Studies Centre set up in Ulu Temburong National Park, Brunei. It is used as an international research centre on the flora and fauna of Borneo, especially in Brunei. It is also used as a teaching and training resource for schools in Brunei and overseas, and government personnel working on the environment.</p>	7	<p>There must be descriptive reference to the two named strategies (ecotourism and fire control). There also needs to be an evaluation into how effective these strategies are in conserving and managing tropical rainforests.</p> <p>Examples – an area of tropical rainforest/specific forest areas or reserves/named plans</p> <p>Levels marking</p> <p>Please ensure that you refer to the Levels of response marking section at the front of the mark scheme before marking this question.</p> <p>One strategy – Max. 4 marks</p>

OR

Question	Answer	Marks	Guidance
4(a)(i)	<p>Describe the global distribution of volcanoes shown in Fig. 4.1.</p> <p>(Mostly) close to plate boundaries Some exceptions, e.g. in middle of Pacific Ocean Close to the edge of continents/on the coast Long/narrow belts/linear pattern Clustered together/concentrated Examples – <u>around</u> Pacific Ocean/along western coast of Americas</p>	2	<p>2 × 1</p> <p>= 0 Pacific Ring of Fire</p>
4(a)(ii)	<p>Explain why the area surrounding the Pacific Ocean is named the ‘Pacific Ring of Fire’ as shown in Fig. 4.1.</p> <p>This area contains a large number/most volcanoes Volcanoes are active/release hot lava There are destructive/convergent plate boundaries It is in the shape of a circle/horseshoe shaped/belt</p>	2	<p>2 × 1</p> <p>= 0 Surrounded by volcanoes Ring</p> <p>Many active volcanoes = 2 marks</p>
4(a)(iii)	<p>Name the type of plate boundary where there can be violent earthquakes but no volcanoes.</p> <p>Conservative/transform/continental-continental plate convergence</p>	1	

Question	Answer	Marks	Guidance
4(a)(iv)	<p>Suggest reasons to explain why the following items have been included in the basic supplies kit shown in Fig. 4.2:</p> <p>A sturdy boots/shoes B respiratory protection (face masks) C first aid kit D bottled water.</p> <p><u>Sturdy boots/shoes</u> To protect feet/to avoid injuries to feet</p> <p><u>Respiratory protection (face masks)</u> Toxic gases/dust in the air/ash in the air/damage to lungs if breathed in</p> <p><u>First aid kit</u> To treat minor injuries/clean wounds/daily medication required stored here</p> <p><u>Bottled water</u> To avoid drinking polluted water/stop the spread of waterborne diseases/remain hydrated</p>	4	<p>4 × 1</p> <p>= 0 Thirsty</p>
4(b)(i)	<p>Name the type of river transportation described in A, B, C and D shown in Fig. 4.3.</p> <p>A = saltation B = solution C = suspension D = traction</p>	4	4 × 1
4(b)(ii)	<p>Identify the river landform labelled A on Fig. 4.4.</p> <p>Meander/meandering</p>	1	

Question	Answer	Marks	Guidance
4(b)(iii)	<p>Explain how the oxbow lake shown in Fig. 4.4 was formed.</p> <p>River is meandering across the valley/erodes laterally Fastest flow/increased velocity on outside of the bend Erosion occurs on the outside of the bend Hydraulic action/abrasion (named type of erosion/description of erosion) Slower flow/decreased velocity on the inside of the bend Deposition on the inside of the bend Neck of the meander narrows (During high flood) river will cut through the meander neck The river carries on the straight path Deposition seals off the ends/meander will be closed</p>	4	4 × 1

Question	Answer	Marks	Guidance
4(b)(iv)	<p>With reference to <u>one</u> major river flood event, describe the impacts on the people. Evaluate how effective the management strategy of flood preparedness was in reducing the impact of this river flood event. Give examples to support your answer.</p> <p>Content Guide</p> <p><u>Answers are likely to refer to:</u></p> <p>People killed People injured Homes destroyed Businesses damaged Insurance claims Psychological issues Cropland/farming land destroyed Early warnings Educating the local people</p> <p><u>More developed answers are likely to refer to:</u></p> <p>Pollution of fertiliser, oil, pesticides and farm runoff causing eutrophication (or excessive plant growth such as algal blooms). Water supplies were polluted which resulted in the spread of waterborne diseases, including dysentery, cholera and typhoid. Modern technology to monitor weather patterns and river volume exists so there are higher chances of flooding events being predicted and early warnings provided.</p>	7	<p>There must be reference to one major flood event and a description of this event on people. An evaluation of how effective the flood preparedness was in reducing the impact of this event is also required.</p> <p>Content will depend upon the major river flood event chosen. General ideas have been included in the content guide, but the candidates answer should contain specific reference to one major river flood event.</p> <p>There is only reference to the effectiveness of one management strategy – flood preparedness (reference to other strategies such as modifying river channels and modifying catchment areas are irrelevant).</p> <p>Example: For Level 3 there must be reference to the name of a river and year – allow Bangladesh and year</p> <p>Levels marking</p> <p>Please ensure that you refer to the Levels of response marking section at the front of the mark scheme before marking this question.</p>

Question	Answer	Marks	Guidance
4(b)(iv)	<p>Countries prepare their citizens through education so that they will know what to do before, during and after a flood.</p> <p>Citizens are taught about evacuation plans so they can escape to shelters or places on higher ground until the floodwaters recede.</p> <p>Flood preparedness measures tend to be more effective in HICs as they have the money to invest in monitoring technology and education programmes.</p> <p>Despite extensive flood preparedness plans in place, some people ignore warnings to evacuate, preferring to stay in their homes and risk death.</p>		<p>A lot of reference to what has been done since the event rather than assessing the impact of the flood management on the actual flood event that has been described – Max. 4 marks</p> <p>If not a river flood, mark the impacts (e.g. coastal flooding/flash floods)</p>

Theme 3: Economic developmentAnswer **one** question from this theme.**EITHER**

Question	Answer	Marks	Guidance
5(a)(i)	Define the term ‘energy conservation’. Reducing the consumption of energy/energy use/reduce overall demand/preventing the waste of energy/saving energy	1	= 0 Any reference to conserving energy
5(a)(ii)	Use Fig. 5.1 to suggest <u>two</u> ways people can conserve energy in their daily life. Use public transport/take the bus instead of driving Turn off lights/appliances when not in use Cycle instead of driving Wear extra clothes rather than turning up the heating/washing clothes less often	2	2 × 1 Must link to pictures – e.g. quick showers = 0 marks

Question	Answer	Marks	Guidance
5(a)(iii)	<p>Explain how the following factors can help with energy conservation: A the use of technology B education.</p> <p><u>The use of technology</u> Smart meters determine where energy is used most Sensors to switch off lights/escalators reducing wastage LED light bulbs provide an energy saving lighting solution Make machines more efficient and use less energy Online shopping/online meetings instead of travelling Digital documents instead of printing Switch to electric vehicles</p> <p><u>Education</u> Raise awareness of the importance of conservation Knowledge on how to save energy New ways/ideas being developed to conserve energy</p>	4	<p>Reserve 1 mark for each factor</p> <p>Can credit in different sections</p> <p>= 0 People conduct research Wind turbines/solar panels Nuclear power</p>
5(b)(i)	<p>Name <u>one</u> type of renewable energy source.</p> <p>Hydroelectric (HEP)/solar/wind/tidal/geothermal/biofuels</p>	1	
5(b)(ii)	<p>Describe the distribution of countries which produce 80–100% of their electricity from renewable energy sources as shown in Fig. 5.2.</p> <p>Dispersed/spread out No clear pattern Mostly in the southern hemisphere/few in the northern hemisphere Mostly/clustering in Africa/South America Several in southern part of Africa/eastern South America Some/few in Europe Some/few in Asia One in Oceania/New Zealand</p>	4	<p>4 × 1</p> <p>= 0 HICs/LICs No mark for named countries except New Zealand</p>

Question	Answer	Marks	Guidance
5(b)(iii)	<p>Explain the advantages of using alternative energy sources for people and the environment.</p> <p>Will not run out/replenished naturally/infinite supply Reduction in greenhouse gases/reduction in CO₂/air pollution Reduce global warming Reduce extreme weather/drought/floods/heatwaves Less acid rain Less damage to forest/aquatic life (from acid rain) Reduction of land for mining/less deforestation/destruction of landscapes Creates jobs in alternative industries Creates income for farmers from technology on the farm Increased energy security Reduces risk of illness/reduces impact on human health/named example Decreased carbon footprint</p>	3	<p>3 × 1</p> <p>= 0 Less pollution Cleaner Safer Does not affect/harm the environment Habitats will not be affected Less animal extinction Cheaper energy</p>
5(c)(i)	<p>Give reasons for the employment structure in Brunei.</p> <p><u>Primary</u> Lack of suitable land for food production/lack of farmland/poor soils/steep slopes Brunei imports most of its food Most people prefer not to work in agriculture/low wages/hot sun/hard work Mainly for the domestic market/little exports of products</p> <p><u>Secondary</u> Linked to production of oil and gas/petrochemical production/halal/pharmaceuticals Mechanisation/machines replace workers</p> <p><u>Tertiary</u> High income/stable employment Growth in tourism/banking/finance/communications Population is well educated</p>	3	<p>3 × 1</p> <p>The question is on reasons – so there is no mark for description of the employment structure.</p> <p>No reserve marks</p>

Question	Answer	Marks	Guidance
5(c)(ii)	<p>Describe the benefits of the oil and natural gas industry for the social and economic development of Brunei. Evaluate the importance of the oil and natural gas industry in the future for Brunei. Give examples to support your answer.</p> <p>Content Guide</p> <p><u>Answers are likely to refer to:</u></p> <p>Jobs provided Taxes paid Export revenue Education and healthcare are supplied Social high standard of living Allows investment in culture Development of infrastructure Attracts FDI Non-renewable sources of energy Other areas have to be considered Future – overdependence on oil/gas, limited jobs created, environmental concerns, global energy changes to alternatives</p> <p><u>More developed answers are likely to refer to:</u></p> <p>A large number of local people are employed and this has increased in recent years with the government’s encouragement to increase local employment including women. To ensure that there is a constant supply of competent local workers, training programmes have been put in place. Shell Company has a 2-year training programme to train local people to work in the oil industry. Oil reserves expected to last 25 years. Natural gas expected to last 40 years. Plans have been outlined in the Wawasan Brunei 2035 to diversify its economy.</p>	7	<p>There must be reference to the benefits of the oil and natural gas industry for both the social and economic development of Brunei. There must also be some form of evaluation of the industry in relation to the diversification of the economy looking into the future.</p> <p>Examples – names of gas fields/location of oil refineries and gas terminals/ data/plans/names of gas and oil companies</p> <p>Levels marking</p> <p>Please ensure that you refer to the Levels of response marking section at the front of the mark scheme before marking this question.</p>

Question	Answer	Marks	Guidance
5(c)(ii)	<p>Upgrade the skills of labour force and reduce unemployment.</p> <p>Strengthen the banking and tourism sectors and widen the economic base to be less reliant on oil and gas production.</p> <p>Efforts to promote investments and facilitate industrial development include the establishment of clusters equipped with infrastructure and facilities.</p> <p>One site is the Sungai Liang Industrial Park (SPARK) designed for downstream processing activities.</p> <p>Another site is the Pulau Muara Besar Island Site designed for the development of oil field support services such as the marine supply base and fabrication yard.</p> <p>Brunei Port Authority continues its efforts to attract more shipping lines to call at the port.</p>		

OR

Question	Answer	Marks	Guidance
6(a)(i)	Identify the country which had the largest percentage growth between 2018 and 2019 as shown in Table 6.1. Japan	1	
6(a)(ii)	Name the continent from which most international tourists arrived in Brunei in 2019 as shown in Table 6.1. Asia	1	
6(a)(iii)	Describe <u>three</u> natural attractions of Brunei for tourists. Ulu Temburong National Park – large area of protected rainforest/area is very biodiverse/canopy walkway/area of natural beauty Labi Forest Reserve – rainforest forest area/hiking Pantai Seri Kenangan/Pantai Muara – beach/sand spit/swimming/sunsets Wasai Wong Kadir – waterfall/forest reserve/hiking Teraja waterfalls – recreational park Tasek Lama – Waterfall/lake/hiking area Bukit Shahbandar – forest recreation park Tasek Merimbun Heritage Park – based around the largest natural lake in Brunei, with facilities to promote hiking and photographing beautiful scenery	3	3 × 1 Do not give any credit to specific places – there needs to be some description of the attraction to get the credit No double credit for description
6(b)(i)	Calculate how much road transport contributes to global CO₂ emissions shown in Fig. 6.2. 75%	1	Must have units (%)

Question	Answer	Marks	Guidance
6(b)(ii)	Suggest <u>one</u> reason to explain why global CO₂ emission from rail is only 1% in Fig. 6.2. Switch from diesel trains to electric trains/most trains are electric Not many railway lines/not many countries use rail transport Cost of setting up railway lines Difficult to put in place in some areas Development of roads Easier/cheaper to transport goods by road	1	= 0 Does not use fossil fuels Reference to renewables
6(b)(iii)	Apart from carbon dioxide (CO₂), name <u>one</u> other greenhouse gas. Methane/nitrous oxide/water vapour	1	= 0 Carbon monoxide Nitrous dioxide Sulphur dioxide Allow Nitrogen oxide
6(b)(iv)	Explain the impact of global warming on the environment. Ice melting Sea level rise/ <u>coastal</u> flooding Submerging low-lying land Melting permafrost layer Changes in weather/climate/more intense storms/extreme weather increases Forest fires Heatwaves Droughts Impact on habitats/death of animals/wildlife Loss/extinction of species/loss of biodiversity	4	4 × 1 = 0 Poor health Poor visibility Temperature becomes hotter Plants will become dehydrated Storms (needs more – such as more intense) Crops Flooding
6(c)(i)	Identify the most polluting industry in 2023 as shown in Fig. 6.3. Energy	1	

Question	Answer	Marks	Guidance
6(c)(ii)	<p>Calculate the percentage that the fashion industry contributed to the total greenhouse gas emissions in 2023.</p> <p>5 (%)</p>	1	
6(c)(iii)	<p>Explain how the environment is affected by the following impacts of industry:</p> <p>A smog B effluent (liquid waste).</p> <p><u>Smog</u> Sunlight is blocked/decreases UV radiation Causes acid rain Death/harm to aquatic life Rivers/lakes become acidic/disrupts the pH Affects soil fertility Animals struggle to breathe Reduces the amount of carbon dioxide absorbed during photosynthesis Forests are harmed/plants killed/wildlife harmed/threat to biodiversity</p> <p><u>Effluent (liquid waste)</u> Water pollution Excessive plant growth of algae Eutrophication Disruption to aquatic ecosystems/harms marine life</p>	4	<p>Reserve 1 mark for each impact</p> <p>= 0 Visual pollution Air pollution Sky cannot be seen Corroding buildings/statues</p> <p>= 0 Disruption to the food chain</p>

Question	Answer	Marks	Guidance
6(c)(iv)	<p>Two strategies used to reduce the impact of industry on the environment are pollution permits and legislation. Describe these <u>two</u> strategies and evaluate how effective they are in reducing the impact of industry on the environment. Give examples to support your answer.</p> <p>Content Guide</p> <p><u>Answers are likely to refer to:</u></p> <p>Allowances that permit pollution Cap and trade Laws made by countries Countries have to report annual greenhouse gas emissions</p> <p><u>More developed answers are likely to refer to:</u></p> <p>Allowances that are distributed to parties that emit pollution. One allowance allows for one tonne of carbon dioxide equivalent of heat-trapping gases. A cap on the amount of emissions is set and allowances are provided up to the cap. Companies that have difficulty cutting down their emissions and exceed the cap given will have to obtain additional allowances by trading. In June 2011, the price of an allowance in the EU was \$16. Countries throughout the world have laws put in place to regulate potential polluters so as to avoid the cost of cleaning after pollution has occurred. The Clean Air Act was established in the USA in 1970. Countries are required under international conventions and protocols for reporting annual emissions of greenhouse gases and air pollutants. This is meant for monitoring the progress made to reduce national emissions. The data collected is valuable for planning future policies, as they are used to assess progress in dealing with climate change. This data is used in the Kyoto Protocol and the targets are binding under international law.</p>	7	<p>There must be descriptive reference to the two named strategies (pollution permits and legislation). An evaluation on how effective these strategies are in reducing the impact of industry on the environment is also essential.</p> <p>Examples – Act/data/price of carbon permits/country/Law</p> <p>Levels marking</p> <p>Please ensure that you refer to the Levels of response marking section at the front of the mark scheme before marking this question.</p> <p>One strategy – Max. 4 marks</p>