Cambridge Assessment International Education

Cambridge O Level

GEOGRAPHY **2230/01**

Paper 1 Geographical Themes **May/June 2021**

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.

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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 descriptors 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.

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.

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	**6–7**	Responses at this level: • 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	**3–5**	Responses at this level: • 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	**1–2**	Responses at this level: • 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**	No creditable response

Theme 1: Population and settlement

Answer **one** question from this theme.

EITHER

Question	Answer	Marks	Guidance
1(a)	**Describe how the birth rate of a country is calculated.** Number of births per thousand population Divide the number of (live) births by the total population Multiply by 1000 to give births per thousand Total number of (live) births in a year / total population X 1000	**2**	Key idea is how the birth rate is calculated
1(b)(i)	**Study Fig. 1.1, which is an extract from a newspaper in Japan. Calculate the difference between the births and deaths in Japan in 2018 and state the impact that this is having on the overall population.** 0.4 million / 400 000 Decrease / minus / declining / negative growth	**2**	Need million
1(b)(ii)	**Give <u>three</u> reasons to suggest why government efforts in Japan are failing to encourage higher birth rates in the country.** Children are expensive / costs of childcare Women spend a long time in education / more opportunities for women Women have careers / do not want to take time off work Low infant mortality rate Children are not needed to work on the farm / provide income Pensions are available – so no need for children to support parents when they are old Late marriage / declining rates of marriage Education about overpopulation High elderly population Birth control / family planning available	**3**	

Question	Answer	Marks	Guidance
1(c)(i)	**Study Fig. 1.2, which shows the projected population increase of seven countries between 2018 and 2050. State the highest projected population increase shown in Fig. 1.2.** 310 million (India)	**1**	Need the actual figure here, so no credit for just naming India Need million
1(c)(ii)	**Suggest the consequences of large population increases for these countries.** Named pollution – any reference to air / noise / visual pollution Pressure on resources – water / food / electricity / gas / population exceeds resources / overpopulation / competition for resources Pressure on education / healthcare Unemployment – too many young people Growth of urban areas – too much congestion / overcrowding / shortage of space for housing Poverty Deforestation	**3**	Crime = 0
1(c)(iii)	**Sketch an expansive population pyramid. Label the key population features on the pyramid.** Credit shape of pyramid or labels Broad base (to show a high birth rate / number of children) Narrow top (to show a low percentage of elderly or old dependants) Concave sides (to show a high death rate) Both sides are symmetrical Triangle shape (as birth rates and death rates are high and life expectancy low)	**4**	Max. 3 for diagram

Question	Answer	Marks	Guidance
1(d)(i)	**Study Fig. 1.3 (Insert), which shows the quality of life in countries around the world.** **Describe the pattern of very high quality of life in countries around the world shown in Fig. 1.3.** Mostly in the northern hemisphere / idea of more in the north Mostly outside of the tropics Mostly HICs / MEDCs All continents except Africa Near Atlantic (Ocean)	**3**	No marks for referring to individual countries. It is the pattern that is required Allow reference to equator / tropics as candidates may have knowledge of these and refer to them in description Allow references to continents
1(d)(ii)	**Describe the strategies used to improve the quality of life in LICs (low income countries). With reference to examples, evaluate how effective these strategies have been.** **Content Guide** <u>Answers are likely to refer to:</u> Improving education Improving health care Improving the role of women Provide more food / clean water Aid Charities / Fair trade <u>More developed answers are likely to refer to:</u> International agreements and the involvement of international organisations Reference may be made to the Millennium Development Goals (MDGs) Reference to the World Bank and how it aims to fight poverty The Asian Development Bank which has a focus on improving the quality of life in Asia and the Pacific The help of individual countries – such as the UK The work of charities such as World Vision, Oxfam, CARE International	**7**	There must be reference to the strategies used and reference to evaluating how effective these strategies have been. Examples are very important and this can be on any scale. **Levels marking** Please ensure that you refer to the Levels of response marking section at the front of the mark scheme before marking this question.

OR

Question	Answer	Marks	Guidance
2(a)(i)	**Study Fig. 2.1, which shows a rural area.** **State <u>two</u> reasons why the site shown in Fig. 2.1 would be a good location for the growth of a settlement.** Close to the river for a water supply / fish Flat land to build on / plant crops Close to the forest for building materials / hunting animals Sheltered area provided by the cliff face / bluff Hilly area for good view Open space so easy to build on / expand	**2**	The key is to 'explain'. Simply lifting features such as river, forest, flat land will receive no credit on its own
2(a)(ii)	**Suggest <u>one</u> factor limiting the future growth of the settlement in Fig. 2.1.** Flooding may occur Protection from enemies maybe a problem Wild animals in the forest Hills / slopes (make it difficult to build on) / cliff face / bluff Lack of space due to forest / hills	**1**	Any valid reason which could be linked to the sketch and is an issue for settlers River = 0
2(b)(i)	**Study Fig. 2.2 (Insert), a photograph which shows a brownfield site.** **Define the term *brownfield site.*** Land which has been built upon before Abandoned Has been cleared Used again (often for a different purpose) Land which has a lot of old factories / dangerous waste	**2**	

Question	Answer	Marks	Guidance
2(b)(ii)	**Suggest why there is a warning sign and fence around the brownfield site shown in Fig. 2.2.** To keep people out Private property / no trespassing Dangerous Buildings could collapse Hazardous waste Uneven ground with large rocky areas	**3**	
2(b)(iii)	**Explain why governments are keen to build on brownfield sites.** Less pressure is put on unused greenfield sites Infrastructure such as electricity, roads etc. already exist Improves city locations, particularly inner-city locations where many sites are located Areas which may have attracted crime, vandalism are now regenerated Areas which are eyesores are improved Hazardous substances / unstable buildings are repaired	**4**	Cheaper = 0
2(c)(i)	**Study Fig. 2.3, which shows the percentage of world population living in cities from 1950 to 2040 (projected).** **Describe the overall change in the percentage of world population living in cities from 1950 to 2040.** Increase By 35.6% More than doubles	**2**	

Question	Answer	Marks	Guidance
2(c)(ii)	**Explain how the quality of life of a family can be improved by moving from a rural area to an urban area in an LIC (low income country).** Access to education improves – primary / secondary and university Access to health care improves – prenatal, immunisations, elderly care Job opportunities are available – more income for the family Higher income – more disposable spending on clothes, entertainment Access to clean water – less cholera / dirty water related problems Access to food – variety of food improves so people have better diets Access to entertainment / leisure and sports facilities Access to public transport / better road network Access to better housing	**4**	Allow development marks

Question	Answer	Marks	Guidance
2(d)	**With reference to a rapidly growing city in Southeast Asia, evaluate the effect of this growth on the people and the environment within the city.** **Content Guide** <u>Answers are likely to refer to:</u> Overcrowding Urban sprawl Pollution – air, noise, visual Poor housing High levels of unemployment Pressure put on services including education and healthcare Pressure put on utilities – electricity, gas More opportunities for people as they move from rural to urban areas More government investment – building new factories, houses, infrastructure <u>More developed answers are likely to refer to:</u> Traffic congestion due to higher levels of car ownership Higher levels of air pollution – exceeding safe rates set by governments Industries burning fossil fuels which produce fine soot particles and large amounts of carbon dioxide Reduced quality of air – respiratory diseases such as asthma Results in low productivity as number of sick days increases Buildings damaged by acid rain Poor housing conditions such as in Dharavi Slum, Mumbai This results in insecure residential status so people may face eviction Self-help / improvement schemes to rehouse people in slum areas Improvements to transport due to demand – Singapore's MRT	**7**	There must be reference to a named city in Southeast Asia and an evaluation of the effect of this growth on the people and the environment within the city. **Levels marking** Please ensure that you refer to the Levels of response marking section at the front of the mark scheme before marking this question.

Theme 2: The natural environment

Answer **one** question from this theme.

EITHER

Question	Answer	Marks	Guidance
3(a)(i)	**Study Fig. 3.1 (Insert), which shows the effects of a recent earthquake. Suggest the short-term and long-term help that the people in the area will need to recover from the effects of the earthquake.** <u>Short-term</u> Evacuation Rescue from collapsed buildings Provide food Provide clean water Provide shelter Medication Burial of dead <u>Long-term</u> Clear the area Foreign aid / financial help Rebuild homes / provide materials to rebuild homes Rebuilding schools Rebuilding healthcare facilities / hospitals Rebuilding infrastructure – roads, railways, airports Provide counselling	**4**	Reserve 1 mark for short-term / long-term Buildings = 0
3(a)(ii)	**Study Table 3.1, which shows information about two earthquakes. Using the information in Table 3.1, state why both areas experienced losses during the earthquakes.** Both areas were very high on the Richter scale / both areas were above 7 on the Richter scale / both powerful earthquakes	**1**	

Question	Answer	Marks	Guidance
3(a)(iii)	**Suggest why the effects in China were so much more devastating than those in Japan.** Because it was during the day in China (this meant that more people were on roads, in schools, on busy streets in China) The strength of the earthquake was more powerful in China The buildings were not as earthquake proof in China / collapsed easier Building density was higher in China Higher population density in China Closer to epicentre in China The emergency services were more prepared in Japan Earthquake drills on 1 September every year in Japan Japanese people better prepared / earthquakes drills / education	**3**	No credit for suggesting that Japan is richer or more developed than China – need to explain why this would reduce the effects of the earthquake.
3(b)	**Explain how earthquakes are caused at transform/conservative plate boundaries.** Plates slide past each other Movement not smooth / friction Plates become locked This causes the build-up in pressure / tension Pressure is released Plates jerk forwards	**4**	

Question	Answer	Marks	Guidance
3(c)(i)	**Explain how the following building features help to reduce the impact from earthquakes:** **A shock absorbers** Absorb the tremors of the earthquake / separate a building from the Earth's movements (base isolators) **B flexible structure** Allows the building to move with the shaking of the earthquake / stop building falling over / less chance of building collapse **C automatic shut-off valves.** Cut off the gas / water / electricity supply / reduces the risk of fire / reduces the risk of flooding from water	**3**	
3(c)(ii)	**Apart from earthquake-proof buildings, describe other strategies that can be used to prepare people living in areas prone to earthquakes.** Monitor the movements of the Earth (with computers or seismometer) Early / emergency warnings to people at risk through media broadcasts / SMS Evacuation plans are put in place Emergency kits in the home Earthquake drills Education linked to earthquakes / posters telling people what to do Emergency shelters for the population	**3**	

Question	Answer	Marks	Guidance
3(d)	**With reference to a named earthquake, describe the impacts of the earthquake on the environment. Evaluate the effectiveness of the management strategies used to reduce the damage from the earthquake.** **Content Guide** <u>Answers are likely to refer to:</u> Buildings collapse Roads damaged Trees destroyed Poor country – few strategies <u>More developed answers are likely to refer to:</u> 85% of buildings damaged / destroyed in the Bam area Loss of historic monuments – the ancient Bam citadel which was over 2000 years old Lack of preparedness – so no effective management strategies in place Very poorly constructed buildings and hospitals collapsed making things even worse	**7**	There must be reference to the impacts of the earthquake on the environment – natural and built environment. Reference must also be made to evaluating the effectiveness of the management strategies put in place. A named earthquake must also be referred to. **Levels marking** Please ensure that you refer to the Levels of response marking section at the front of the mark scheme before marking this question.

OR

Question	Answer	Marks	Guidance
4(a)(i)	**Describe the difference between weathering and erosion.** Weathering is the breaking down of rock in situ Erosion is the movement of this material elsewhere	**2**	As this is the first time appearing on the paper two separate statements can be credited and therefore the difference can just be inferred.
4(a)(ii)	**Name the type of weathering which will be most active in the following areas:** **A rocks in a tropical rain forest** Chemical weathering **B rocks in a mountainous area** Freeze-thaw weathering **C rocks in a desert.** Onion-skin weathering / exfoliation / expansion-contraction	**3**	Reserve 1 mark for each area

Question	Answer	Marks	Guidance
4(a)(iii)	**Explain <u>two</u> factors which affect the type and rate of weathering.** **Temperature: (physical weathering)** Daily temperature changes from hot to cold Temperatures that vary around 0 degrees Celsius **Rainfall: (chemical weathering)** Occurs in hot and wet places It can also be slightly acidic and more pronounced in limestone areas **Geology:** Some rock weathers more easily than others Mudstone weathers much easier than granite **Biological: (biological weathering)** Roots work their way into cracks in rock and break up the rock Burrowing animals break up rock **Relief:** Temperature falls results in frost shattering	**4**	Developed points get 2 marks – 2 x 2 Also allow single points for each type of weathering – 4 x 1
4(b)	**Study Fig. 4.1 (Insert), a photograph which shows an area of coastline. Describe and explain how a coastline like that in Fig. 4.1 is formed over time.** The coastline consists of headlands and bays / hard rock and soft rock (Reserve) The headlands are made of harder rock The bays are made of softer rock The bays / soft rock gets eroded faster / hard rock is more resistant By hydraulic action / abrasion / destructive waves And form beaches The headlands are eroded much slower Cliffs can develop into caves / arches / stacks / stumps / wave cut platforms	**5**	Reserve 1 mark for describe and 1 mark for explain Credit a named type of erosion only once

Question	Answer	Marks	Guidance
4(c)	**Study Fig. 4.2, which shows how material is moved along the coastline. Name and describe the process taking place.** The process is longshore drift (Reserve) The direction of the prevailing wind Causes the swash to carry material up the beach At an angle / 45 degrees The backwash carries the material back to sea Due to gravity At a right angle / 90 degrees Zig-zag movement of material occurs along the coast	**4**	Reserve 1 mark for naming longshore drift Swash and backwash = 1
4(d)	**Describe <u>two</u> factors which cause coastal flooding. Which of these factors is more important? Give examples to support your answer.** **Content Guide** <u>Answers are likely to refer to:</u> Heavy storms / typhoons Relief of the land Lack of sea defences Sea level rise <u>More developed answers are likely to refer to:</u> Storm surges caused by heavy storms / typhoons as higher wind speeds result in larger waves Low lying land and gentle sloping is more easily flooded than land that is higher and steeper Sea defences need to be continually repaired and maintained	**7**	There must be reference to <u>two</u> factors. An evaluation of which factor is most important is needed. Reference to specific examples are required. **Levels marking** Please ensure that you refer to the Levels of response marking section at the front of the mark scheme before marking this question.

Theme 3: Economic development

Answer **one** question from this theme.

EITHER

Question	Answer	Marks	Guidance
5(a)	**Study Fig. 5.1, which shows the origin of tourists vising Canada in 1972 and 2015.** **Describe how the origin of tourists visiting Canada changed from 1972 to 2015.** Europe has decreased (large decrease) / 24.1% Asia has increased (large increase) / 19.7% Africa has increased (very slightly) / 0.7% South America has increased (very slightly) / 0.7% Oceania has increased (doubled) / 3.4% Mexico, Central America and the Caribbean has decreased (very slightly) / 0.5%	**4**	Statistics are not required – but if they are included credit the change Do not credit straight lifting of figures
5(b)(i)	**Explain how the following factors can increase the growth of global tourism:** **higher disposable income** People have more money to spend (on luxuries such as travel) / afford to travel	**1**	
5(b)(ii)	**Explain how the following factors can increase the growth of global tourism:** **accessibility.** If locations make places easier to reach by air etc. then this will increase tourism / visas are easier to obtain / easier to travel	**1**	

Question	Answer	Marks	Guidance
5(c)(i)	**Describe the difference between natural and cultural tourist attractions.** Cultural attractions are man-made / religious buildings / amusement parks / example Natural attractions are physical / rainforest / lakes / example	**2**	The difference can be inferred – the candidate can write two separate sentences, one on cultural and one on natural attractions.
5(c)(ii)	**Explain the advantages that tourism can bring to a country.** Source of income (to the country) Creation of employment / jobs Multiplier effect takes place Develop infrastructure in the country Maintains the standard of natural and built environment / country looks after itself Money can be used to preserve historical buildings Money can be used to protect natural attractions Exchange of culture between tourists and locals Country becomes known (around the world)	**4**	
5(c)(iii)	**Study Fig. 5.2 (Insert), a photograph which shows a tourist destination in the UK.** **Suggest problems that tourism may cause to the local people and the environment in this area.** Overcrowding on the beach Increased risk of spread of disease Water pollution Litter / land pollution / visual pollution Noise pollution Air pollution Increase in prices Congestion on the local roads Limits facilities / access for locals Trampling on grass areas Disturb wildlife	**4**	Crime = 0

Question	Answer	Marks	Guidance
5(d)(i)	**Define the term *sustainable tourism*.** Visiting a place as a tourist and trying to make a positive impact Reduce the negative impact on the economy, society and environment / protect the environment Ensuing that tourism in the area continues in the future	**2**	
5(d)(ii)	**Describe the strategies that can be used to encourage and develop sustainable tourism. Evaluate how successful these strategies have been in ensuring tourism is sustainable. Give examples to support your answer.** **Content Guide** <u>Answers are likely to refer to:</u> Limiting tourist numbers Raising awareness Biodiversity conservation and protection Private and public collaboration Eco-friendly practices Using local labour and resources <u>More developed answers are likely to refer to:</u> Limiting numbers in areas where the environment is at risk / or where too many people could present a large threat – coral reefs Make places cheaper throughout the year to discourage all the tourists arriving at once – Venice Education in cultural areas is about cultivating an appreciation for history, heritage and diverse cultures Ensure that local people are employed and their skills in crafts or dance is acknowledged Charge an admission fee which can be used to conserve what people are going to see – museums, palaces Use solar / wind power as a source of electricity	**7**	Strategies must be named and described. There must be an evaluation of how successful these strategies have been when trying to promote sustainable tourism. Examples / locations must be referred to. **Levels marking** Please ensure that you refer to the Levels of response marking section at the front of the mark scheme before marking this question.

OR

Question	Answer	Marks	Guidance
6(a)(i)	**Study Fig. 6.1, which shows Brunei's biggest exports and main export partners in 2018. Suggest <u>one</u> reason why the countries shown in Fig. 6.1 are the main export partners of Brunei.** Close location / countries are nearby / good infrastructure / transport links / export partners have limited oil reserves	**1**	
6(a)(ii)	**Using information from Fig. 6.1, describe the importance of the oil and natural gas industry to Brunei.** Very important / makes up 90% of exports	**1**	Not 'biggest' as that is direct copying
6(a)(iii)	**Explain how the oil and natural gas industry benefits the social and economic development of Brunei.** Contributes to GDP / income for the country / brings in revenue for the country / increases the economy The revenue can be spent on healthcare / education Provides electricity in the country Low-cost fuel / fuel for transport Employs local people Income for people Training opportunities are provided Improvement of infrastructure – road network Tourism opportunity – Oil and Gas Discovery Centre Trade relations with other countries Zero income tax Allows development of secondary industry	**5**	Reserve 1 mark for social and 1 mark for economic Allow development marks

Question	Answer	Marks	Guidance
6(b)(i)	**Study Fig. 6.2, which shows the number of motor vehicles per 1000 people in different countries.** **State how many more motor vehicles per 1000 people Brunei has compared to France.** 140 (motor vehicles per 1000 people)	**1**	
6(b)(ii)	**The total number of motor vehicles in China is the highest in the world. However, China has the lowest number of motor vehicles per 1000 people shown in Fig. 6.2. Suggest <u>one</u> reason why.** China has got a very high population / have to divide the number of motor vehicles by a large population / divide the total number of motor vehicles by a large number of 1000s	**1**	
6(b)(iii)	**Explain the consequences of an increase in car ownership within a country.** Increased congestion / traffic jams Air pollution / Carbon Dioxide increase / smog Increased asthma / breathing difficulties / lung cancer Contributes to acid rain Contributes to global warming Deforestation / disruption to wildlife due to new roads Accidents Noise pollution Increased demand for oil	**4**	

Question	Answer	Marks	Guidance
6(b)(iv)	**Describe the strategies that can be used to reduce pollution from cars and factories.** Promote public transport / make it cheaper / more accessible Making public transport more environmentally friendly Congestion charge Park and Ride schemes Carpooling Encouraging walking / cycling Encourage people to work from home / less commuting Improve car emissions / catalytic converters / electric cars / hybrids Legislation / emission control / restricting emissions / fines Carbon tax / carbon offsetting Incentives to industries to reduce pollution – subsidies Change to cleaner fuels in industry / cars Recycling waste materials	**5**	Reserve 1 mark for cars and 1 mark for factories

Question	Answer	Marks	Guidance
6(c)	**'Alternative sources of energy can never replace fossil fuels.' How far do you agree with this statement? Give examples to support your answer.** **Content Guide** <u>Answers are likely to refer to:</u> Alternative energy does not produce as much energy as fossil fuels Not everywhere can use wind / solar / geothermal power / HEP High set up costs Shortage of land Lack of expertise <u>More developed answers are likely to refer to:</u> Compared to alternative energy, the energy created from fossil fuels may be relatively cheaper but their power generation is not efficient HEP is 95% efficient / Tidal 90% / Coal-fired station is 45% / Gas turbine is 38% There may not be a continuous supply of energy on cloudy days A large number of turbines are needed to produce a large amount of electricity and not enough space may be available Some countries may lack skilled workers / expertise and so cannot use / promote alternative energy There are many factors that limit development of renewable energy such as planning laws	**7**	There must be reference to different types of alternative energy sources. An evaluation of whether these alternative energy sources can meet future energy demands is needed. Candidates must refer to examples in their response. **Levels marking** Please ensure that you refer to the Levels of response marking section at the front of the mark scheme before marking this question.