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Cambridge Assessment International Education

Cambridge IGCSE™

GEOGRAPHY **0460/12**

Paper 1 Geographical Themes **October/November 2022**

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 2022 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

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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.

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Each question carries 25 marks. Candidates cannot earn above the maximum marks available within each sub section.

The marking scheme attempts to give guidance about the requirements of each answer and lists a number of responses, which will earn marks along with the general principles to be applied when marking each question.
It should be noted that candidates can earn marks if their answers are phrased differently provided, they convey the same meaning as those in the mark scheme. THE CANDIDATES DO NOT NEED TO USE THE SAME WORDING TO EARN MARKS.

The notation `etc.` at the end of an answer in the mark scheme signifies that there may well be other correct responses or examples that can be given credit. Providing the statement is true, relevant to the question asked and not repetition of a previous point made, credit should be given.

A point made within one sub-section which is an answer to the question set in a different sub-section should not be given credit as each sub-section asks different questions which require independent answers.

The mark scheme uses semi colons (;) to separate marks and diagonals to separate alternative answers.

During coordination the mark scheme is modified to add points agreed after discussion or to delete any points not allowed. All examiners should ensure that their modified scheme is fully up-to-date before marking begins.

Marking Mechanics.

Point marking is used for sections (a) and (b) of each question, although marks are available in specified questions for development of appropriate points. Ticks should be used to clearly indicate where a mark has been allowed. Where a development point has been allowed the symbol “DEV” should be placed adjacent to the tick. The number of ticks should always be equal to the total number of marks awarded. Only one development mark for each mark scheme point please.

Where a candidate makes a point which is not quite sufficient for credit an upturned `V` insert symbol should be used. If after careful consideration a mark is awarded which gives `benefit of doubt` to the candidate, the letter `J` should be placed adjacent to the tick (i.e., the candidate has `just` achieved the mark).

Crosses are acceptable to signify wrong answers and the letters `I/R` should be used to indicate those which are irrelevant.

Levels of response marking is used for section (c) of each question.
Thus, it is the quality of the response that determines which level an answer has achieved rather than the quantity of statements contained within it. However, once assigned to a level the mark achieved within that level is determined by the number of points made.

Levels 1 and 2 are distinguished by whether statements are simple (level 1) or developed/elaborated (level 2). A candidate can immediately enter L2 by making developed points without making any L1 statements. In order to achieve L3 a candidate must have already reached the top end of L2 – in addition his/her answer should have a clear example and if the answer is place specific as well (7 marks). Highlight place specific detail.

Where statements are assigned levels by the examiner this should be indicated by the use of L1 and L2 next to the statements. Ticks should **not** be used on answers that are marked using levels of response marking. L1 annotation should be removed once a L2 is awarded for an answer. L3 annotation is not used. There is no need for a summary level at the end of a response.

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Summary:
Level 1 (1 to 3 marks):
1 simple statement (1 mark)
2 simple statements (2 marks)
3 simple statements (3 marks)

Level 2 (4 to 6 marks):
1 developed statement (4 marks)
2 developed statements (5 marks)
3 or more developed statements with e.g. (6 marks)

Level 3 (7 marks)
3 or more developed statements + named example with at least one piece of place specific detail.

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Question	Answer	Marks
1(a)(i)	The way the population is divided up into/made up/composition of /proportion/percentages of different age groups/gender 1 mark	**1**
1(a)(ii)	Completion of pie chart: Dividing line at 62 (1 mark) Shading (1 mark) 2 @ 1 mark	**2**
1(a)(iii)	Africa has more 0–24/young people; Asia has more 25–49/economically active; Asia has more 50+/older people. Note: 1 Answer needs to be comparative. 2 Do not accept statistics or the word `only`. 3 Accept descriptive words such as double/half etc. 3 @ 1 mark	**3**
1(a)(iv)	Ideas such as: Good/better health care/more hospitals/doctors/nurses; Eradication/reduction/less diseases/vaccination/medicines/ treatments for appropriate examples of diseases; Good/better food supply/better nutrition/more balanced diet; Good/better/cleaner water supply; Good/better sanitation/hygiene/improved waste disposal; Education/awareness about hygiene/diet/health/disease etc.; Healthy lifestyle/exercise; Pensions/care homes etc. 4 @ 1 mark	**4**
1(b)(i)	Ideas such as: Even gender balance; Lots of/large proportion/percentage of old dependents/over 65; Few/small proportion/percentage of young dependents/0 to 19; OR more old (65+) dependents than young dependents (0–19)= 1 (alternative to lines 2 and 3); More economically (20–64) active than young dependents (0–19); Similar percentage in all economically active age groups/no marked decline in proportion as age increases; 3 @ 1 mark	**3**

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Question	Answer	Marks
1(b)(ii)	Ideas such as: High birth rates/fertility rates/birth rate higher than death rate; Lack of availability of/ /access to/can`t afford contraception/family planning; Lack of education about contraception/family planning etc.; Religious intolerance of contraception/family planning; High infant mortality rate; People want children to send them out to work/work on farms; Lack of pensions/need for children to look after elderly; Need for children for household chores or e.g., look after siblings, collect firewood etc.; Carry on family name/sign of virility/keep having children until a boy is born etc.; Less women have careers/lack of education for girls/women; No emancipation of women; Early marriage; Abortions not available; Polygamy; High(er) death rates/shorter life expectancy etc. Do not credit development on death rate line. Comparison is not required. Unless otherwise stated assume answer is about LEDCs. 5 @ 1 mark or development	**5**

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Question	Answer	Marks
1(c)	**Levels marking** Level 1 (1–3 marks) Statements including limited detail of the difficulties which result from having a large dependent population. Level 2 (4–6 marks) Uses named example. More developed statements of the difficulties which result from having a large dependent population. (**Note:** Max 5 if no named or inappropriate example) Level 3 (7 marks) Uses named example. Comprehensive and accurate statements including some place specific reference. Content Guide: Answers are likely to refer to: Burden on economically active (or the country)/higher dependency ratio/they do not make money; Food has to be provided for them; Pressure on working population; Tax increases are likely/they do not pay tax; Cost of providing pensions; Cost of services such as healthcare/more health care needs; Cost of social care/care homes/childcare; Lack of investment in education/services for young people; Lack of workforce/innovation; People cannot work as they are caring for them; Need to attract workers from abroad/problems caused by immigration; Difficulty of defending country etc. Place specific reference is likely to consist of: Named parts of the chosen country, Population data etc.	**7**

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Question	Answer	Marks
2(a)(i)	Residential 1 mark	**1**
2(a)(ii)	Ideas such as: Road/transportation/tram line/public transport/metro/street train; Shops/shopping street/commercial/trading goods; Apartments/offices/residential on upper floor etc. 2 @ 1 mark	**2**
2(a)(iii)	Ideas such as: Inner city/inner suburbs/centre/CBD; *Reasoning* as appropriate to location suggested: High density/buildings close together; Lots of shops; Lots of pedestrians/people/customers/shoppers; Old buildings; etc. (1 mark for location and 2 for reasoning) 3 @ 1 mark	**3**
2(a)(iv)	Ideas such as: Plenty of space/land available/need lots of land for parking/shops; Low cost land; Less traffic congestion/easy road access; Within easy reach of people/customers nearby/in suburbs/can be easily accessed by people/customers from other urban areas/surrounding settlements; labour availability; low noise/air pollution etc. 4 @ 1 mark	**4**
2(b)(i)	Inner ring road; Express metro system; Growth poles/more offices or shops outside central part of city; New Towns; 3 @ 1 mark	**3**

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Question	Answer	Marks
2(b)(ii)	*Advantages such as*: Employment/jobs/or example of job; Business opportunities created/multiplier effect; Easier to get to other countries/easy access for flights; Short travelling time/distance/low cost of travel to airport; People could reach airport using public transport/metro; Plenty of space for car parking etc. *Disadvantages such as*: Increased noise; Congestion on radial roads/more vehicles/increased traffic; Loss of amenity value/open space/places to walk dog; Visual impact etc. 5 @ 1 mark or development	**5**
2(c)	**Levels marking** <u>Level 1</u> (1–3 marks) Statements including limited detail which describe the effects of urban sprawl on the natural environment. <u>Level 2</u> (4–6 marks) Uses named example. More developed statements which describe the effects of urban sprawl on the natural environment. (**Note:** Max 5 if no named or inappropriate example) <u>Level 3</u> (7 marks) Uses named example. More developed statements which describe the effects of urban sprawl on the natural environment with some place specific reference. <u>Content Guide:</u> Deforestation; Loss of habitats; Atmospheric pollution; Acid rain; Water pollution; Noise pollution; Ecosystems destroyed; Food chains disrupted; Flooding; Killing of wildlife/species loss etc. <u>Place specific reference is likely to consist of:</u> Locational details/named areas within/around the urban area, Specific details of impacts, statistics etc.	**7**

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Question	Answer	Marks
3(a)(i)	NE/North-East One mark	**1**
3(a)(ii)	Wind vane/weather vane; Anemometer. 2 @ 1 mark	**2**
3(a)(iii)	Ideas such as: On roof/at a high point/on top of a pole/top of a hill; Away from trees; Away from buildings; In an area which is fenced/secure. Reasons such as: To prevent wind being blocked/disrupted/channeled by buildings; To prevent tampering/vandalism etc. 3 @ 1 mark	**3**
3(a)(iv)	Ideas such as: Death/injury; damage to settlements/property/houses/roof slates blown off/chimneys collapse/homelessness; carpets ruined/possessions destroyed; Need to evacuate; Roads damaged/flooded/access prevented/cars damaged; Water borne disease/cholera; Workplaces damaged/closed/people unable to work/fishing industry/port activity disrupted; Schools/shops/churches (or another specific example) damaged; Electricity cut off; Water supplies polluted; Damage to boats; Cost of rebuilding; Dependence on welfare/aid; Crops/livestock/farmland destroyed/salination of soils/soil washed away etc. 4 @ 1 mark	**4**
3(b)(i)	Ideas such as: January to March is (slightly) higher <u>maximum</u> temperature; No variation in <u>minimum</u> temperature; January to March has higher temperature range; August to November has higher (relative) humidity/humidity increases by Aug to Nov; August to November has higher rainfall/rainfall increases by Aug to Nov/rainfall is approx. 10 X higher etc. Note: comparison needed 3 @ 1 mark	**3**

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Question	Answer	Marks
3(b)(ii)	Ideas such as: Use wet and dry (bulb) thermometer/hygrometer (or use a digital hygrometer); Check every day/daily; Check at the same time (each day); Read temperatures on wet and dry bulb; Work out difference between wet and dry bulb temp./depression of wet bulb; Use (relative humidity) table; Read off figure displayed/statistics from data logger (if digital hygrometer) etc. 5 @ 1 mark or development	**5**
3(c)	Level 1 (1–3 marks) Statements including limited detail which describe how flooding is being managed. Level 2 (4–6 marks) Uses named example. More developed statements which explain how flooding is being managed. (**Note:** Max 5 if no named or inappropriate example) Level 3 (7 marks) Comprehensive and accurate statements, including some place specific details. Content Guide: Answers will vary according to example chosen but are likely to refer to: Dams/reservoirs/artificial lakes; Dredging/deepening channel; Straightening river; Afforestation/reduction of deforestation; Land use zoning/not building on flood plain; Overflow channels/spillways; Sluice gates/spreading grounds; Levees/embankments/barriers; Monitoring/prediction/early warning/evacuation/alarms; Education about flood prevention; Sandbags; Buildings on stilts etc. Place specific reference is likely to consist of: Locational details, named places along river, specific details of schemes etc.	**7**

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Question	Answer	Marks
4(a)(i)	(West to) east	**1**
4(a)(ii)	Y = divergent/constructive/diverging. Z = convergent/destructive/converging. 2 @ 1 mark	**2**
4(a)(iii)	Ideas such as: Linear; Clustered; On/near plate boundaries; Close to volcanoes; **Max 2 marks** for examples of named plates or areas e.g.: around Pacific Ocean/Pacific Ring of Fire; Centre of Atlantic Ocean/between South American and African Plate; Western N/S America/between North American and Pacific plate/between Nazca and South American Plate; Eastern/south/south-east Asia/between Pacific, Indo-Australian/Philippine plates; East Africa/between African and Arabian Plate; Southern Europe/between Eurasian and African Plates etc. 3 @ 1 mark	**3**
4(a)(iv)	Ideas such as: More likely to have warnings from volcanoes/smoke etc.; Volcanic eruptions can be predicted but earthquakes cannot be predicted with certainty; Volcanic lava moves slowly/people have more chance of escaping from an eruption/the impact of an earthquake is more instant/causes more immediate collapse of buildings; Volcanic eruptions are likely to affect a smaller area than an earthquake; Earthquake more likely to cause a tsunami; Earthquakes are more likely to cause starvation/homelessness/spread of disease; Earthquakes are more likely to occur in more densely populated areas etc. 4 @ 1 mark	**4**
4(b)(i)	Ideas such as: On Caribbean Plate; West/WSW of plate boundary/eastern edge of Caribbean Plate; 280–320km from plate boundary/edge of North American Plate etc. 3 @ 1 mark	**3**

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Question	Answer	Marks
4(b)(ii)	Ideas such as: It lies close to/on a plate boundary/where two plates meet; Plates move towards each other/convergent; Subduction occurs/one plate sinks under the other; Heating/melting of crust; Creation/build up of magma; Build up/increase of pressure; Magma rises/escapes through cracks/is pushed up to the surface/rises etc. 5 @ 1 mark or development	**5**
4(c)	**Levels marking** Level 1 (1–3 marks) Statements including limited detail which describe what has been done to reduce impacts of earthquakes. Level 2 (4–6 marks) Uses named example. More developed statements which explain what has been done to reduce impacts of earthquakes. (**Note:** Max 5 if no named or inappropriate example) Level 3 (7 marks) Comprehensive and accurate statements, including some place specific details. Content Guide: Answers are likely to refer to: Earthquake proofing/strengthening of buildings/or specific details –e.g., stronger foundations, cross beams, pyramid shape, shatterproof glass; counterbalances etc.; Land use zoning/use of seismic hazard maps; Education about emergency procedures; `Earthquake day'; Emergency drills in schools; Building low rise homes; Monitoring; Evacuation planning/routes/drills; Open spaces at regular intervals between buildings; Provide earthquake kits/1st Aid kits; Rescue teams; Improved hospitals/doctors etc. Place specific reference is likely to consist of: Locational details, named places in the area, specific details of strategies etc.	**7**

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Question	Answer	Marks
5(a)(i)	15 (million) 1 mark	**1**
5(a)(ii)	Ideas such as: Large seasonal variation; More arrivals/tourists/tourism is more important in summer/July + August/between June and September/middle of year than Winter/November to February/beginning/end of year; Numbers rise during Spring/beginning of year/Jan to July; Numbers fall during Autumn/Aug to Nov etc. 2 @ 1 mark	**2**
5(a)(iii)	Ideas such as: More tourists will visit when temperatures are high; In periods when there is a lot of rain there will be less tourists; There will be large amounts of tourists during school holidays; There will be more tourists when there are festivals etc.; Attractions/facilities close in winter/are only open in summer etc. 3 @ 1 mark	**3**
5(a)(iv)	Ideas such as: Employment/earn money; Development of road/rail network; Building of airports; Cultural exchange; Building of electricity grid/water pipes; More business/earnings for local traders etc. One mark for the identification of each benefit and the second mark for an explanation. E.g., 1: people can get jobs/or example/income in the tourist industry (1) so they can earn money to provide for their family etc. (2) E.g., 2: better road networks are built (1) so local people can access areas away from where they live more easily (2) 2+2 @ 1 mark	**4**
5(b)(i)	Ideas such as: Mountains/hills; Lake/river/sea; Marina/docks/harbour/boats; Museums/church/cathedral/historic buildings/sites/monument; Restaurants/pizzeria etc. 3 @ 1 mark	**3**

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Question	Answer	Marks
5(b)(ii)	Ideas such as: Noise; Less privacy; Drunken/anti-social behaviour; Some tourists wear inappropriate clothing or e.g.; Racism/discrimination; Litter/rubbish/trash; Traffic congestion; Some beaches become private/inaccessible; Seasonal employment; Low pay/long hours/exploitation of workers; Loss of farmland; Loss of local housing areas/accommodation used for tourists not locals/less land to build houses; Air pollution causes asthma/breathing difficulties; Water pollution reduces fish stocks; Pressure on/tourists given priority for water supplies/electricity; Increase in prices/cost of living/inflation; Culture clashes/westernisation of culture/dilution of culture etc. 5 @ 1 mark or development	**5**

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Question	Answer	Marks
5(c)	**Levels marking** Level 1 (1–3 marks) Statements including limited detail which describe concerns about its impact on the natural environment. Level 2 (4–6 marks) Uses named example. More developed statements which explain why there are concerns about its impact on the natural environment. (**Note:** Max 5 if no named or inappropriate example) Level 3 (7 marks) Uses named example. Comprehensive and accurate statements, including some place specific reference. Content Guide: Answers are likely to refer to issues such as: People may trample vegetation/footpath erosion/soil erosion; Clearance of vegetation/deforestation; Litter; Noise; Water pollution; Fish/marine life scared; Atmospheric pollution/carbon dioxide emission; Animals killed/scared away etc. Place specific reference is likely to consist of: Locational details/named areas, Specific details of issues etc.	**7**

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Question	Answer	Marks
6(a)(i)	Completion of bar at 16% 1 mark	**1**
6(a)(ii)	Examples such as: HEP/hydro/hydel; Geothermal; Tidal power; Wave power; Biomass/methane etc. 2 @ 1 mark	**2**
6(a)(iii)	Ideas such as: More from non-renewable; More non-renewable coal is used than renewable wind/solar; Coal 30% compared with wind 23%/solar 10%; There are more different types of renewable energy than non-renewable; 46% non-renewable but 41% renewable etc. 3 @ 1 mark	**3**
6(a)(iv)	Ideas such as: Non-renewable sources need replacing/are being depleted/are hard to obtain/are finite; Cheap running costs/high (increasing)/fluctuating cost of non-renewables; Renewables will not run out; Renewable energy does not pollute the atmosphere; Need to reduce carbon dioxide emissions/slow down global warming; Renewable energy does not produce waste; Renewable energy does not pollute water courses; Pressure groups/protest/International agreements; Better technology developed to generate renewable energy etc. 4 @ 1 mark	**4**
6(b)(i)	Ideas such as: Positive connection/higher GDP higher use of energy; Relationship is not exact/anomalies/weak relationship; Statistics for two countries to support positive relationship or anomaly; (two countries required with data for each variable); E.g., China 6500 (GDP)/3200 (kWh) and Canada 52500 (GDP)/14600 (kWh) (allow 500 tolerance either way) etc. 3 @ 1 mark	**3**

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Question	Answer	Marks
6(b)(ii)	Ideas such as: Production of carbon dioxide/greenhouse gases/carbon emissions; Enhances global warming; Melting ice caps; Worries about rise in sea level/flooding of coastal lowlands or islands; And increasing droughts/heat waves/more extremes of climate; Production of oxides of sulphur; Causes acid rain; May result in radiation leaks; Deforestation; Loss of habitat; Less plants to absorb carbon dioxide; Impact on food chains/migration patterns; Loss of species/extinction/reduction in biodiversity etc. 5 @ 1 mark or development	**5**

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Question	Answer	Marks
6(c)	**Levels marking** Level 1 (1–3 marks) Statements including limited detail which describe how risks of an economic activity to the local natural environment are being managed. Level 2 (4–6 marks) Uses named example. More developed statements which explain how risks of an economic activity to the local natural environment are being managed. (**Note:** Max 5 if no named or inappropriate example) Level 3 (7 marks) Uses named example. Comprehensive and accurate statements including some place specific reference. Content Guide: Answers are likely to refer to: Logging; Tourism; Manufacturing industry; Quarrying; Agriculture etc. **Note:** Any example of economic activity can be used at any scale. Management strategies are likely to include: Planning restrictions; Legislation; Protection of ecosystems; National Parks; Control of numbers; Technological improvements; Use of renewable energy etc. Place specific reference is likely to consist of: Locational details/names of places within chosen area, Specific details/statistics.	**7**

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