Cambridge Assessment International Education

Cambridge IGCSE™

GEOGRAPHY **0460/12**

Paper 1 **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.

Cambridge International is publishing the mark schemes for the May/June 2021 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

This document consists of **18** printed pages.

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.

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 may need to be modified to add points agreed after discussion or to note 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 is 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.

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.

Question	Answer	Marks
1(a)(i)	3 (millions) 1 mark	**1**
1(a)(ii)	Decreased/higher in 1980/lower in 2015/(almost) halved (1 mark) From 6.1/6.2 million to 3.4-3.6 (million)/by 2.5-2.8 million (1 mark) 2 @ 1 mark	**2**
1(a)(iii)	Ideas such as; it became less triangular/pyramid shaped in 1980 but rounded in 2015/concave in 1980 convex in 2015; base/young dependents became narrower/thinner; top/old dependents became wider/thicker; centre/economically active became wider **Note:** Comparison required. 3 @ 1 mark	**3**
1(a)(iv)	Ideas such as: Lower birth rate/fertility rate; Greater availability/affordability/use of contraception/family planning; More education about contraception/family planning; Secularization of society/religion less influential/more religious tolerance of contraception or abortion; Availability of abortion; More women working/girls being educated; Low/reduction in infant mortality; Pensions/young no longer needed to support elderly; children can no longer be sent out to work on farms/mechanization of farms; Desire for more material possessions/holidays/expense of children; Later marriage/many people have children later in life; Government anti-natal policy; Female emancipation; Change in traditional attitudes to family size (or example) etc. 4 @ 1 mark	**4**
1(b)(i)	Completion of Fig. 1.2 1 mark for percentage plot and line (at 23 – needs to be close to centre of bar) 1 mark for dividing the bar (at 7 million) 1 mark for shading of bar (both sections need shading) 3 @ 1 mark	**3**

Question	Answer	Marks
1(b)(ii)	Ideas such as: Reduction in size of workforce/not enough workers/skills lost; Many people are not contributing to economy/producing; Less innovative workforce; need for immigration; immigration could cause tension; increased dependency ratio; people cannot work due to having to care for elderly; less taxpayers; workforce needs to pay higher taxes; spending on pensions/government payments for elderly; more pressure/higher spending on health care/care homes/hospitals; more difficult to defend country/recruit forces; closure of/problems for specified services for young/or, e.g. schools 5 @ 1 mark or development	**5**
1(c)	Levels marking <u>Level 1</u> (1–3 marks) Statements including limited detail which describe the causes and/or consequences of underpopulation. <u>Level 2</u> (4–6 marks) Uses named example. More developed statements which describe the causes and/or consequences of underpopulation. (**Note:** Max 5 if no named or inappropriate example) <u>Level 3</u> (7 marks) Uses named example. Comprehensive and accurate statements which describe the causes and consequences of underpopulation, including some place specific reference. <u>Content Guide:</u> Candidates are likely to refer to causes such as: Physical constraints on settlement, e.g. climate/relief (1 × L2 MAX) Emigration Disease/war/famine and consequences such as: underemployment lack of labour lower standard of living **Note:** consequences could be positive or negative. <u>Place specific reference is likely to consist of:</u> Named places within the country Specific details of causes/consequences Statistics, etc.	**7**

Question	Answer	Marks
2(a)(i)	Increasing proportion of/more people living in urban areas(towns/cities)/large amounts of people moving from rural to urban areas (countryside to cities), etc. 1 mark	**1**
2(a)(ii)	Continent which has most cities with population of 10 million or more = Asia. Continent where there are no cities with a population of over 5 million = Australasia 2 @ 1 mark	**2**
2(a)(iii)	Ideas such as: Uneven; Widespread; North America **or** South America **or** `the Americas/(northern) Europe/Australasia/Middle East (any 2 for 1 mark); Western hemisphere/the west 3 @ 1 mark	**3**
2(a)(iv)	Ideas such as: Rural to urban migration; More work available in cities/high paid jobs; more investment taking place in cities; health care provision in cities; education in cities; water supply; electricity supply; better availability of food; drought/desertification; mechanization of farms, etc. **Note:** Accept urban pulls or rural pushes but no double credit. 4 @ 1 mark	**4**
2(b)(i)	Ideas such as: Several storeys/two storeys/varying heights/homes on top of each other; Corrugated iron roofs/roofs covered by plastic sheets; Flat roofs; Close together/tightly packed/high density/cramped; Concrete/stone/brick/solid structure; Mixture of homes/shops/workshops; Small windows/balconies; Various colours (or examples of 2 or more colours); Satellite dishes, etc. 3 @ 1 mark	**3**

Question	Answer	Marks
2(b)(ii)	Ideas such as: Living spaces are small; They have nowhere to grow food/lack of food/high prices of food; Children have no space to play; Disease might easily spread; Noise; Air pollution; Dangerous/congested/poorly made roads; Unemployment; Exploitation/low pay/specified problem of working in informal sector; Lack of water/dirty or polluted water; High crime rates; Lack of electricity; Rubbish/litter; Poor sanitation/sewage disposal; Lack of privacy/security; Cannot afford/expensive rents/cost of houses, etc. **Note:** Answers could refer to urban or rural areas – comparison not needed but do not double credit ideas. 5 @ 1 mark or development	**5**

Question	Answer	Marks
2(c)	Levels marking Level 1 (1–3 marks) Statements including limited detail which describe what has been done to reduce the problems caused by urban growth. Level 2 (4–6 marks) Uses named example. More developed statements which describe what has been done to reduce the problems caused by urban growth. (**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: Candidates are likely to refer to solutions to problems such as: (Traffic congestion), e.g. ring roads (Unemployment), e.g. attract TNCs (Lack of housing/squatter settlements), e.g. site and services schemes (High crime rates), e.g. employ more police (Air pollution), e.g. legislate against pollution from factories Description of problems = 0 Explanation of how/why the solution is appropriate =0 Place specific reference is likely to consist of: Named parts of the chosen settlement/ detail of solutions/statistics etc. Examples can be MEDC/LEDC city/town in any country.	**7**

Question	Answer	Marks
3(a)(i)	divergent 1 mark	**1**
3(a)(ii)	Ideas such as; (Edges of) the plates/crust destroyed; Rock is melted/turned into magma/lava/goes into the mantle/crumpled, etc. 2 @ 1 mark	**2**
3(a)(iii)	Ideas such as: Gap/space created/opens up; Magma/lava fills the gap/passes through cracks/fissures; Magma/lava rises to surface/escapes/is released; New land/islands/ocean floor/crust created/lava solidifies, etc. 3 @ 1 mark	**3**

Question	Answer	Marks
3(a)(iv)	One mark for showing typical strato-volcano shape (pyramid/triangle shape with steep sides). Three further marks to be awarded for labelling of features such as: Crater; Parasitic cone/secondary cone; Layers of lava and ash; Magma chamber; Vent/(magma) pipe, etc. 4 @ 1 mark	**4**
3(b)(i)	Ideas such as the flow from Mokuaweoweo: Did not last for as many days; Travelled a shorter distance/10 km cf 25 km/covered a smaller area; Did not descend as far down/to 3500 metres cf 900 metres; Does not split into several flows like the one from Pu`u Ula`ula, etc. Or vice versa for Pu`u Ula`ula but no double credit. Both flows were in a north east/east north east direction/ /Mokuaweoweo flows to SW/SSW as well as NE/ENE but Pu`u Ula`ula only flows NE/ENE/ Mokuaweoweo spread in two directions rather than one **Note:** Comparison needed – accept differences and similarities 3 @ 1 mark	**3**
3(b)(ii)	Ideas such as: Volcanoes give warnings/earthquakes cannot be so easily predicted; People have time to evacuate/escape before volcano erupts/lava moves slowly; Earthquakes can affect a large area/volcano only affects those areas close to it; Relatively few people live close enough to volcanoes to be affected by them/earthquakes can affect very densely populated areas; Earthquakes are much more common than volcanic eruptions, etc. 5 @ 1 mark or development	**5**

Question	Answer	Marks
3(c)	Levels marking Level 1 (1–3 marks) Statements including limited detail which explain the causes of an earthquake. Level 2 (4–6 marks) Uses named example Developed or linked statements which explain the causes of an earthquake. (**Note:** Max 5 if no named or inappropriate example. Credit country names to max.5) Level 3 (7 marks) Comprehensive and accurate statements including some place specific reference. Content Guide: Answers can refer to conservative or destructive margin: Location on plate boundary Convection currents Plate movement (slide alongside each other/together) Pressure build up friction pressure release Seismic waves/vibrations travel through crust, etc. Place specific reference is likely to consist of: Locational details/named areas within earthquake zone, Plate names (if not credited for L2) Specific details of earthquake/date/time/magnitude Statistical information **Note:** Conservative margin = 2 × L1 Subduction = L1 Conservative margin where plates slide past each other = L2 The boundary of plates X and Y (plate names must correctly match example) = L2 Subduction of plate X under plate Y (as above) **Note:** Only credit plate names once as development for L2	**7**

Question	Answer	Marks
4(a)(i)	C 1 mark	**1**
4(a)(ii)	X = Plunge pool Y = Overhang/outcrop/ledge/hard rock layer 2 @ 1 mark	**2**
4(a)(iii)	Ideas such as: Wearing of soft rock/undercutting of hard rock layer; Collapse of overhang/hard rock; Retreat of waterfall; Gorge remains where waterfall was previously, etc. 3 @ 1 mark	**3**
4(b)(i)	Ideas such as: Close to/on flood plains/flat land around Sungari/Ussuri/Amur rivers; Land below 200 metres; In/close to Harbin City/Khabarovsk; Downstream of/close to/around confluence/joining of rivers, etc. 3 @ 1 mark	**3**
4(b)(ii)	Ideas such as: Lack of/removal of vegetation/deforestation; Large amount of/heavy rainfall; Rainfall over a long period of time; Saturated soil/rock/marshland; Steep slopes/rapid run off; Snow melt; urban areas/impermeable areas; land (alongside river) is flat/flood plain; joining of tributaries results in more volume of water; large/mountainous catchment area; lack of river management or example (e.g. dams), etc. 4 @ 1 mark	**4**
4(b)(iii)	Ideas such as: Build dams/reservoirs; Build/raise levees/banks/use sandbags; Afforestation/reduce deforestation/grow mangroves; diversion channels/spillways; dredging/deepening channel; flooding of meadow land/land use zoning, flood barriers/sluice gates; straightening river/canalization, etc. **Note:** Dev must be about the method not explanation or development 5 @ 1 mark	**5**

Question	Answer	Marks
4(c)	Levels marking Level 1 (1–3 marks) Simple statements which describe the river and valley processes and/or landforms at stated locations between source and mouth. (e.g. wider, deeper, more discharge, faster, more gentle gradient) Level 2 (4–6 marks) Developed or linked statements which describe or clearly imply the changes in processes and/or landforms which occur along a river and its valley from source to mouth. (e.g. V shaped valley becomes wider and more open/gently sloping sides) Level 3 (7 marks) Accurate statements which describe the changes which occur along a river and its valley from source to mouth with reference to processes and landforms. Content Guide: Answers are likely to refer to: Width Depth volume Long profile Cross section Discharge Velocity Load Erosion….transportation…deposition Named landforms in different parts of the course, etc.	**7**

Question	Answer	Marks
5(a)(i)	Human Development Index (all three words need to be correct) 1 mark	**1**
5(a)(ii)	Ogun….Kwara….Borno…Sokoto All correct = 2 marks 2/3 correct = 1 mark 0/1 correct = 0 marks 2 @ 1 mark	**2**
5(a)(iii)	Ideas such as: high income/GDP; High life expectancy/good health care/clinics/hospitals/many doctors/nurses/vaccination/medicines are available in some states; good education/skills/literacy; Presence/absence of mineral/natural resources or example; Energy supplies or example; Whether the state is mainly rural or urban; Availability of water supplies/drought/presence of rivers; Mainly primary sector/agriculture low income; Development of manufacturing/secondary industry/TNCs increase wealth; Development of business/commerce/tertiary employment increase wealth; Development of tourism; good accessibility/roads/railways/transport; Historical development/impact of colonialism; Fertility of soils/efficiency of agriculture; Impacts of trade/exports; Government/corruption/variation in government funding; Whether state is landlocked or coastal; Civil war/conflict, etc. 3 @ 1 mark	**3**
5(a)(iv)	Ideas such as: HDI is a composite indicator of development/HDI looks at social factors (as well as economic factors); education/literacy <u>and</u> health/life expectancy); HDI scores for every country are between 0 and 1/based on comparable measurements; HDI is not affected by population size unlike total GNP. HDI can be used to show changes over time/it is not affected by inflation, etc. **Note:** No need for comparison 4 @ 1 mark	**4**
5(b)(i)	Fig. 5.2 = Secondary/quaternary Fig. 5.3 = Primary Fig. 5.4 = Tertiary 3 @ 1 mark	**3**

Question	Answer	Marks
5(b)(ii)	Ideas such as: **primary** employment (or e.g.) decreases as a country develops/less developed countries/LEDCs/countries with low HDI have a higher proportion of primary; as mechanization reduces manpower in agriculture; as the country becomes technologically advanced; as resources are exhausted; **secondary** employment (or e.g.) increases initially as a country develops/NICS are mainly secondary; as there is more demand for manufactured goods; then **secondary** employment decreases as further development takes place; as manufactured goods can be imported when a country is richer; **tertiary** employment (or e.g.) increases as development occurs/more developed countries/MEDCs/countries with high HDI have a greater proportion of tertiary; as there is a greater demand for services; highly developed countries have work in **quaternary** sector (or e.g.); as population has developed skills for this type of work; due to high level of technology, etc. 5 @ 1 mark or development **Note:** All 'as' statements can only be credited as development.	**5**
5(c)	Levels marking Level 1 (1–3 marks) Statements including limited detail which explain the causes of globalization. Level 2 (4–6 marks) More developed statements which explain the causes of globalization. Level 3 (7 marks) Comprehensive and accurate statements which explain the causes of globalization including reference to one or more examples. Content Guide: Answers are likely to refer to the role of: technology transnational companies air transport developments containerization/sea transport Internet communications media variation in wage rates globally global demand westernization (Lack of) legislation – wage rates/environment, etc. trade agreements/free trade global banking	**7**

Question	Answer	Marks

Question	Answer	Marks
6(a)(i)	Bar plotted on Fig. 6.1 **Note:** No need for shading 1 mark	**1**
6(a)(ii)	April/May/June/July/August/September/October November/December/January/February/March 2 @ 1 mark	**2**
6(a)(iii)	Ideas such as: Precipitation is low (decreasing) when evaporation is high (increasing)/Precipitation exceeds evaporation in the winter months (December–February); Precipitation is high (increasing) when evaporation is low (decreasing)/evaporation exceeds precipitation in the summer months (April–September); overall there is more evaporation than precipitation during the year; Statistics which support either of the statements on the first two lines of the mark scheme, i.e. two statistics and a month (MAX 1 Reserved) **Note:** Statistics must be accurate and refer to both precipitation and evaporation and state the month/season – for season statistics need to be added up. 3 @ 1 mark	**3**
6(a)(iv)	Ideas such as: Use of reservoirs/dams Store water in tanks Transfer of water from areas of surplus Use of water from underground/aquifer/wells/boreholes Importing of water supplies; Desalination Use of bottled water Use of grey water for gardens/irrigation, etc Clean/filter/treat water Conservation measures (or examples) Educate people about recycling/water conservation Water rationing/limit use of water Use more efficient methods of irrigation or example (e.g. drip irrigation) Cloud seeding, etc. 4 @ 1 marks	**4**

Question	Answer	Marks
6(b)(i)	Ideas such as: Uneven; Linear; Edges of/around (Sahara) desert; 0–35 N or a smaller correct band (e.g. 10–20 N) or single latitude (e.g. 15 N); Close to Mediterranean Sea/northern coast, etc. 3 @ 1 mark	**3**
6(b)(ii)	Ideas such as: Lack of drinking water/difficulties in supplying drinking water/dehydration People have to travel further/spend longer to get water Lack of water for crops/crops cannot grow/livestock/farm animals die/cattle rearing becomes impossible Low yield Malnutrition/starvation/lack of food Need to produce more food leads to overcultivation/overgrazing And deforestation which may lead to loss of fuel source for people Migration from area/need to travel to find food/work Sandstorms reduce visibility, etc. 5 @ 1 mark or development	**5**

Question	Answer	Marks
6(c)	Levels marking <u>Level 1</u> (1–3 marks) Statements including limited detail which explain how economic activity is causing the local natural environment to be at risk. <u>Level 2</u> (4–6 marks) Uses named example. More developed statements which explain how economic activity is causing the local natural environment to be at risk. (**Note:** Max 5 if no named or inappropriate example) <u>Level 3</u> (7 marks) Uses named example. Comprehensive and accurate statements including some place specific reference. <u>Content Guide:</u> 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. Risks are likely to refer to: Loss of vegetation Extinction of species Impact on ecosystems/food chains Specified types of pollution, etc. <u>Place specific reference is likely to consist of:</u> Locational details; Names of places within chosen area Specific details/statistics	**7**