Cambridge Assessment International Education

# Cambridge IGCSE™

**GEOGRAPHY** **0460/13**

Paper 1 **October/November 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 October/November 2021 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.





**[Turn over**

## 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.

| Question | Answer | Marks |
|---|---|---|
| 1(a)(i) | On Fig. 1.1<br><br>Note: Same horizontal shading as France or more widely spaced<br><br>1 mark | **1** |
| 1(a)(ii) | 743 divided by 10.18 (1 mark)<br>= 73 (1 mark)<br><br>2 @ 1 mark | **2** |
| 1(a)(iii) | Ideas such as:<br>Uneven;<br>Clustered together/bordering each other;<br>West/Western/Central Europe;<br>In a line/chain;<br>40N (37–39) to 60N/less than/South of 60N etc.<br><br>3 @ 1 mark | **3** |
| 1(a)(iv) | Ideas such as:<br><br>Cold/near the Arctic Circle/at a high latitude;<br>Can't grow crops/can't work outside/hyperthermia/difficult to survive/ice so difficult to travel;<br><br>Relief/mountainous;<br>So it is difficult to build on/farm/travel;<br><br>Long way from the mainland of Europe/it is an island;<br>So not easily accessible/isolated/hard to travel/limits immigration;<br><br>Volcanoes/earthquakes;<br>Danger of/damage caused by eruptions.<br>Etc.<br><br>2 marks for identifying correct factors and 2 marks for explanation<br><br>4 @ 1 mark | **4** |
| 1(b)(i) | Ideas such as:<br>Many buildings are high rise;<br>Buildings are close together/packed;<br>There is little open space/greenery/parks;<br>Building on slopes etc.<br><br>3 @ 1 mark | **3** |

| Question | Answer | Marks |
|---|---|---|
| 1(b)(ii) | Ideas such as:<br><br>Difficult to find housing/cramped houses/squatter settlements/homelessness;<br>Spread of disease;<br>Lack of employment/low pay;<br>Causes crime (dev);<br>Causes poverty (dev);<br>Lack of/pressure on health services;<br>Lack of/pressure on education;<br>Lack of food;<br>Lack of water;<br>Pollution of drinking water;<br>Waterborne diseases;<br>Traffic congestion/jam;<br>Air pollution/smog/car exhausts;<br>Noise/or example such as car horns;<br>Causes breathing difficulties (dev);<br>High cost of living/inflation/cannot afford housing/food/education/healthcare/other examples;<br>Lack of space for recreation;<br>Etc.<br><br>Note: Allow one development mark per idea.<br><br>5 @ 1 mark or development | **5** |

| Question | Answer | Marks |
|---|---|---|
| 1(c) | Levels marking<br><br>Level 1(1–3 marks)<br>Statements including limited detail which explain the causes of overpopulation.<br><br>Level 2(4–6 marks)<br>Uses named example.<br>More developed statements which explain the causes of overpopulation.<br>(Note: Max 5 if no named or inappropriate example)<br><br>Level 3(7 marks)<br>Uses named example.<br>Comprehensive and accurate statements which explain the causes of overpopulation, including some place specific reference.<br><br>Content Guide:<br>Answers are likely to refer to:<br>– High natural population growth/birth rate<br>– Lack of contraception<br>– Many women do not have careers<br>– Lack of education for females<br>– Traditional attitudes<br>– Reduction of/low death rates/long life expectancy<br>– Investment in health care<br>– Resource depletion/lack of resources<br>– e.g. aridity restricts water supply<br>– e.g. no deposits of minerals/oil etc.<br><br>High BR =L1; High DR=L1<br>High BR due to lack of contraception=L2.<br>High BR and low DR means increasing population =L2<br><br>Place specific reference is likely to consist of:<br><br>Named parts of the chosen country/correct reference to area within the continent e.g. West Africa.<br>Population data etc. | **7** |

| Question | Answer | Marks |
|---|---|---|
| 2(a)(i) | Inner city area with mixed land use<br><br>1 mark | **1** |
| 2(a)(ii) | A6 = housing<br><br>F2 = factories/industry<br>2 @ 1 mark | **2** |

| Question | Answer | Marks |
|---|---|---|
| 2(a)(iii) | Ideas such as:<br>Canal/river/boat/ship/water transport;<br>Roads/motorway/lorry/truck/van;<br>Railway/train<br><br>3 @ 1 mark | **3** |
| 2(a)(iv) | Ideas such:<br><br>*Some people would be in favour*:<br>As they would be able to shop there/access to shops;<br>Jobs created;<br>Happy that the area was improved aesthetically;<br>Disused buildings would be removed/put to good use;<br>Removal of disused buildings safer;<br><br>*Some people would be against as*:<br>They would have preferred to re-open factory as they worked there;<br>Others would have wanted another <u>specified</u> land use/open space/recreation/housing;<br>Traffic congestion/more traffic;<br>Air pollution/fumes <u>from</u> vehicle exhausts<br>Noise;<br>Litter;<br>Visual pollution/eyesore<br>Anti-social behaviour or example;<br>Competition with local businesses;<br>Etc.<br><br><u>Note:</u> 2 marks in favour ± 2 marks against<br>Do not credit direct opposites.<br><br>4 @ 1 mark | **4** |
| 2(b)(i) | Ideas such as:<br>High rise buildings/four or five storeys high;<br>Buildings close together;<br>Crowded/congested/lots of people;<br>Pedestrianized/rising bollards;<br>Hotels/shops/restaurants;<br>Advertising/signs/lights etc.<br><br>3 @ 1 mark | **3** |

| Question | Answer | Marks |
|---|---|---|
| 2(b)(ii) | Ideas such as:<br><br>Many shops/services have closed/to open new shops/offices;<br>Need to attract more customers/visitors/tourists;<br>Building new metro stations/bus stations;<br>Need to increase accessibility;<br>Many businesses move out to malls/out of town;<br>Many are old/buildings need to be updated/in need of renovation;<br>Reduce criminal behaviour/dark hidden spaces or example;<br>Reducing access for vehicles/to control the traffic/better traffic control;<br>Investment from businesses etc.<br><br>5 @ 1 mark or development | **5** |
| 2(c) | Levels marking<br><br><u>Level 1</u>(1–3 marks)<br>Statements including limited detail which describe and/or explain the types of pollution and their causes.<br><br><u>Level 2</u>(4–6 marks)<br>Uses named example.<br><br>Statements which describe <u>and</u> explain the types of pollution and their causes.<br>(**Note:** Max 5 if no named or inappropriate example)<br><br><u>Level 3</u>(7 marks)<br>Uses named example.<br>Comprehensive and accurate statements which describe and explain the types of pollution and their causes with some place specific reference.<br><br>Note: 1 × L2 max for each type of pollution.<br><br>Can credit explanation without description for L1.<br>L2 must include description and explanation.<br><br><u>Content Guide:</u><br><br>Answers are likely to refer to:<br>Types of pollution:<br>Air pollution<br>Noise pollution<br>Visual pollution<br>Water pollution<br>Land pollution/waste<br>Litter<br>Causes:<br>High volume of people (noise/litter)<br>Vehicle exhausts (air)<br>Lack of open space/high rise/poorly designed buildings (visual) etc. | **7** |

| Question | Answer | Marks |
|---|---|---|
| 3(a)(i) | Magma chamber<br><br>1 mark | **1** |
| 3(a)(ii) | 3.1 = shield (volcano)<br>3.2 = strato(volcano)/composite (cone)<br><br>2 marks | **2** |
| 3(a)(iii) | Ideas such as shield volcano/3.1 is:<br>Less steep/more gently sloping/more flat;<br>Wider/statistics;<br>Higher/taller/statistics;<br>Composed of lava whereas stratovolcano is lava and ash/strato has ash whereas shield doesn't;<br>One cone/crater/vent whereas stratovolcano has a secondary cone/crater/vent.<br>Etc.<br><br>Note: Answers could focus on Fig. 3.1 (as above) or reverse ideas for Fig. 3.2 but must be comparative.<br>They must state which volcano they are referring to by figure number or by name.<br><br>3 @ 1 mark | **3** |
| 3(a)(iv) | Ideas such as:<br><br>Employment in/make money from/ tourist industry/or example;<br>Geothermal power;<br>Mining/mineral extraction/or example;<br>Scenic beauty;<br>Hot springs;<br>Fertile/good soils/high yields of crops.<br>Etc.<br><br>4 @ 1 mark | **4** |
| 3(b)(i) | Ideas such as:<br><br>Evacuation;<br>Search and rescue;<br>Rebuild buildings or example such as housing/tents/shelters;<br>Healthcare/doctors/treatment for injuries/medicines;<br>Burial of dead/safe disposal of corpses;<br>Rebuilding of roads;<br>Food aid;<br>Provision of water/repairs to pipes;<br>Repairs to electricity/gas/sewers;<br>Provide clothing/blankets/shoes.<br>Etc.<br><br>3 @ 1 mark | **3** |

| Question | Answer | Marks |
|---|---|---|
| 3(b)(ii) | Ideas such as:<br><br>Earthquake proof buildings/houses/bridges or buildings/houses/bridges which withstand earthquakes;<br>Deep/strong foundations/avoid high rise;<br>Pyramid shape/cross bracing/shatterproof glass/flexible pipes etc. (2 max);<br>Education about what to do in an earthquake;<br>Earthquake drills;<br>Evacuation routes/planning/procedures;<br>Plan areas of open space near houses;<br>Train emergency/search and rescue teams;<br>Improve health care system/better hospitals/more doctors;<br>Monitoring of fault lines;<br>Tsunami walls/warning systems/alarms;<br>Emergency supplies of food/water/first aid;<br>Land use zoning.<br>Etc.<br><br>5 @ 1 mark or development | **5** |

| Question | Answer | Marks |
|---|---|---|
| 3(c) | Levels marking<br><br>Level 1 (1–3 marks)<br>Statements including limited detail which explain the causes of a volcanic eruption.<br><br>Level 2 (4–6 marks)<br>Uses named example<br><br>Developed or linked statements which explain the causes of a volcanic eruption.<br><br>(Note: Max 5 if no named or inappropriate example. Credit country names to max.5. Allow names of small islands where the volcano name is not usually used e.g. Montserrat)<br><br>Level 3 (7 marks)<br>Comprehensive and accurate statements including some place specific reference.<br><br>Content Guide:<br><br>Answers can refer to constructive or destructive margin:<br>Location on plate boundary<br>Types of plate such as oceanic/continental<br>Convection currents<br>Plate movement (apart or together)<br>Subduction<br>Destruction of plate<br>Build up of magma<br>Pressure<br>Creation of gap<br>Release of magma etc.<br><br>Place specific reference is likely to consist of:<br><br>Locational details/named areas within/around the volcano,<br>Specific details of eruption/date/time/magnitude<br>Statistical information deaths<br>Do not accept plate names as place specific, as allowed within L2 statements. | **7** |

| Question | Answer | Marks |
|---|---|---|
| 3(c) | Note :<br>Constructive/destructive (plate) margin = 2 x L1<br>Subduction = L1<br>Oceanic/heavier plate subducts under other plate = L2<br>Destructive margin where plates move towards each other = L2 or<br>Constructive margin where plates slide apart from each other = L2<br>Oceanic and continental crust converge = L2<br>The boundary of plates X and Y (plate names must correctly match example) = L2<br>Subduction of plate X under plate Y = L2 (plate names must correctly match example)<br><br>Note: Only credit plate names once as development for L2 | |

| Question | Answer | Marks |
|---|---|---|
| 4(a)(i) | B<br><br>1 mark | **1** |
| 4(a)(ii) | Atmospheric Pressure = B<br>Precipitation = C<br><br>2 @ 1 mark | **2** |
| 4(a)(iii) | A= wind vane<br>B = barometer<br>C = rain gauge<br>D = sunshine recorder<br><br>4 correct = 3 marks<br>2/3 correct = 2 marks<br>1 correct = 1 mark<br><br>Accept links made in any way.<br>3 @ 1 mark | **3** |
| 4(a)(iv) | Ideas such as:<br><br>High up;<br>On a roof/building/at the top of a pole;<br>Away from buildings;<br>Away from trees;<br>In an open space;<br><br>So that it is exposed to the wind/will not be sheltered/obstructed/wind direction not affected by them (reserve)<br>Etc.<br><br>4 @ 1 mark | **4** |

| Question | Answer | Marks |
|---|---|---|
| 4(b)(i) | Cirrus = (1 mark)<br>1/2 oktas = (1 mark)<br>Features such as:<br>High level;<br>Wispy;<br>Thin;<br>White; (1 mark)<br><br>3 @ 1 mark | **3** |
| 4(b)(ii) | Ideas such as:<br><br>Looking at the clouds/by eye/take photographs;<br><br>Identification using a chart/table/book/pictures/internet;<br>Total the number of days with different types of cloud;<br><br>Estimating/counting or using a grid to see how many eighths/oktas/proportion/how much of sky is covered;<br>Work out averages for cloud cover;<br><br>Check every day;<br>Check at the same time;<br>Present using pie chart/divided rectangles/bar graphs;<br>Etc.<br><br>5 @ 1 mark or development | **5** |

| Question | Answer | Marks |
|---|---|---|
| 4(c) | Levels marking<br><br>Level 1(1–3 marks)<br>Statements including limited detail which describe/explain how river is managed.<br><br>Level 2(4–6 marks)<br>Uses named example<br><br>Developed statements which explain how river is managed.<br><br>(Note: Max 5 if no named or inappropriate example.)<br><br>Level 3(7 marks)<br>Comprehensive and accurate statements which explain how river is managed including some place specific reference.<br><br>In order to achieve L2 candidates need to explain rather than give developed description<br>e.g. dredging the river to increase river capacity L2<br>dams to store water/regulate river flow L2<br><br>Content Guide:<br><br>Answers are likely to include the following ideas:<br>Raised banks/levees<br>Dredging<br>Straightening of channel/cutting off meanders<br>Afforestation<br>Dams<br>Sluice gates<br>Overflow channels<br>Zoning of land use<br>Warning system<br>Build on higher land/houses on stilts<br>Etc.<br><br>Place specific reference is likely to consist of:<br><br>Locational details<br>Specific details of schemes – cost/size etc. | **7** |

| Question | Answer | Marks |
|---|---|---|
| 5(a)(i) | 8/9 (%)<br><br>1 mark | 1 |

| Question | Answer | Marks |
|---|---|---|
| 5(a)(ii) | HEP;<br>Wind power;<br>Biomass<br><br>2 @ 1 mark | **2** |
| 5(a)(iii) | Ideas such as;<br><br>It will not run out/other forms of energy or example may run out;<br>Low production/running costs;<br>It does not pollute the atmosphere/cause global warming;<br>They do not produce solid waste products;<br>To have more variety of methods of generation;<br>To prevent/cut down import of energy resources/or e.g. etc.<br><br>3 @ 1 mark | **3** |
| 5(a)(iv) | Advantages such as:<br><br>Large amounts of electricity produced from small amount of uranium/raw material/input;<br>Running cost is low;<br>No atmospheric pollution/global warming/climate change;<br>Raw material/uranium is unlikely to be depleted; etc.<br><br>Disadvantages such as:<br><br>Expensive building/technology costs;<br>Need for high technology/skills;<br>Problems with disposal of nuclear waste;<br>Potential of contamination/radiation/meltdown;<br>High cost of decommissioning etc.<br><br>Note: 2 marks for each of ADS/DISADS<br><br>4 @ 1 mark | **4** |
| 5(b)(i) | Ideas such as:<br><br>Flooding of/need to relocate settlement/homes/Bia Tenda;<br>Flooding/loss of farmland/pasture/crops destroyed/reduce food supply;<br>Flooding of/loss of vegetation/forest/wetland environments/habitat;<br>Flooding of/need to re-route/rebuild part of road (to Georgetown) etc.<br>Large body of water may attract mosquitos/malaria;<br>Fish killed/migration of fish will be altered;<br>River/boat/ferry/water transport/ travel restricted;<br>Water in river downstream is reduced/impact of this e.g. less irrigation water or water too shallow for ferry;<br>Construction of dam/road causes noise/air pollution<br><br>3 @ 1 mark | **3** |

| Question | Answer | Marks |
|---|---|---|
| 5(b)(ii) | Ideas such as:<br><br>Attracts industry;<br>Electricity/power/water available for industry/factories/production/ or example such as water for cooling;<br>New road/bridge over river will make area more accessible/allow transport of goods/connect towns more easily;<br>Jobs/employment;<br>Attract tourism;<br>People will have money to spend at local businesses/positive multiplier;<br>Water will be available for agriculture/irrigation;<br>Yields will increase;<br>Lake can be used for fishing;<br>People will be healthier/better fed so they will be able to work harder;<br>Subsistence farmers may produce extra produce for sale;<br>Generating more trade in the area etc.<br><br>5 @ 1 mark or development | **5** |

| Question | Answer | Marks |
|---|---|---|
| 5(c) | Levels marking<br>Level 1(1–3 marks)<br>Statements including limited detail which explain how sufficient water is supplied for domestic use.<br><br>Level 2(4–6 marks)<br>Uses named example.<br>More developed or linked statements which explain how sufficient water is supplied for domestic use.<br>(**Note:** Max 5 if no named or inappropriate example)<br><br>Level 3(7 marks)<br>Uses named example.<br>Comprehensive and accurate statements including some place specific reference.<br><br>Transported by pipes from rivers/reservoirs L2<br>Water in reservoirs is treated with chemicals L2<br>Desalination (plants) remove(s) salt water from sea L2<br>Underground water is extracted from boreholes/wells L2<br>Groundwater is sourced and held in tanks L2<br>Note: Each stem/method can only be developed once<br><br>Content Guide:<br><br>Answers are likely to refer to:<br>Water treatment<br>Importing water<br>Reservoirs/dams<br>Use of aquifer/underground water<br>Rainfall harvesting<br>Road tankers<br>Boreholes<br>Wells<br>Pipelines<br>Extraction from rivers<br>Water transfer schemes<br>Desalination etc.<br><br>Place specific reference is likely to consist of:<br><br>Names of places and schemes within chosen area/country<br>Specific details/statistics | **7** |

| Question | Answer | Marks |
|---|---|---|
| 6(a)(i) | Best fit line on Fig. 6.1.<br><br>Note: Must be a straight line but does not need to go through the origin.<br><br>1 mark | **1** |
| 6(a)(ii) | Ideas such as:<br><br>Relationship is positive/higher the HDI the higher the life expectancy;<br>It is (very) strong/not perfect/stronger above 60 years/there are exceptions/anomalies;<br><br>2 @ 1 mark | **2** |
| 6(a)(iii) | Ideas such as in country with high HDI they have;<br>With a high/(low):<br>Better healthcare/hospitals/more doctors/medicine;<br>Better food supplies;<br>Clean water;<br>People are educated about diet/healthcare/healthy lifestyles;<br>Better sanitation/hygiene/toilets;<br>Better care for elderly;<br>Availability of pensions;<br>Life expectancy is used in HDI calculation;<br>Etc.<br><br>Note: can consider low HDI otherwise assume they are considering high HDI.<br><br>3 @ 1 mark | **3** |
| 6(a)(iv) | Ideas such as:<br><br>HDI is a composite index/doesn`t just look at income;<br>HDI incorporates a measure of education/reflects literacy;<br>HDI incorporates life expectancy/reflects the health of the people;<br>The 0 to 1 scale enables comparison/incomes per person are not directly comparable between countries/values of currency vary between countries;<br>A high income does not always mean a high quality of life/average income may be high but cost of living may also be high etc.<br><br>4 @ 1 marks | **4** |
| 6(b)(i) | Ideas such as:<br>Less/reduction in primary sector;<br>Primary: 18/19 to 10/11 by 7–9 (% not needed)<br>Increase in tertiary sector;<br>Tertiary: 58/59 to 68/69 by 9–11 (% not needed)<br><br>Statistics 1 mark reserve for either of the above.<br>Do not use `only' to indicate lower.<br><br>3 @ 1 mark | **3** |

| Question | Answer | Marks |
|---|---|---|
| 6(b)(ii) | Ideas such as:<br><br>Better education/more skills;<br>Investment in secondary/tertiary or example such as investment in tourism or electronics (by Government/TNCs);<br>Exhaustion of natural resources;<br>More technology/mechanization;<br>Import of food supplies/manufactured goods/raw materials;<br>Demand for services;<br>Migration to cities so more people work in tertiary;<br>Etc.<br><br>5 @ 1 mark or development | **5** |
| 6(c) | Levels marking<br>Level 1(1–3 marks)<br>Statements including limited detail which describe the effects of global warming.<br><br>Level 2(4–6 marks)<br>More developed statements which describe the effects of global warming.<br><br>**Note: MAX 5 if no area references, MAX 6 if one area reference**<br><br>Level 3(7 marks)<br>Comprehensive and accurate statements, including some place references.<br><br>Content Guide:<br><br>Answers are likely to refer to:<br>Changing rainfall patterns,<br>Melting of ice caps/glaciers,<br>Global impacts on species/biodiversity/food chains<br>Flooding of coastal lowlands<br>Wildfires<br>Etc. | **7** |