Cambridge Assessment International Education

Cambridge IGCSE™

GEOGRAPHY **0460/12**

Paper 1 **February/March 2023**

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 February/March 2023 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.

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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.

PLEASE NOTE
1 **Level 2 statements** must be developed/elaborated **or** related relevant ideas need to be linked.

2 **The use of statistics** is not an acceptable form of development, thus a simple statement with statistics is a Level 1 statement. The use of statistics alone can be credited as an alternative to a L1 written statement.

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3 **Place specific information** is required as part of the criteria to achieve a Level 3 answer. This could relate to the location of the case study chosen or aspects of the study which make it authentic rather than simply generic (e.g. named places within the area, other specific factual detail, relevant statistics etc.). Requirements of each study will vary and your Team Leader will provide guidance. **and c Are continent**

4 If the **case study example** requires a country name the name of the continent in which it is located is not sufficient for the place specific requirement, however with more precision it would be acceptable :
(e.g. 'Nigeria, located in Africa…..' is not sufficient but 'Nigeria, located in West Africa' is sufficient.) if the case study requires the name of an area/town or city the name of the country in which it is located is not sufficient for the place specific requirement, however with more precision it would be acceptable (e.g. 'Mumbai, located in India…..' is not sufficient but 'Mumbai, located in Western India' is sufficient.)

Question	Answer	Marks
1(a)(i)	18.5 to 19 (per 1000) 1 mark	**1**
1(a)(ii)	The birth rate decreased overall The death rate increased overall 2 @ 1 mark	**2**
1(a)(iii)	10.8 (10.7 to 10.9) – 7.4 (7.4 to 7.5) or 7.4 (7.4 to 7.5) – 10.8 (10.7 to 10.9) (1) = 3.4 (3.2 to 3.5) (1) – (3.2 to 3.5) per 1000 (1) 3 @ 1 mark	**3**
1(a)(iv)	Ideas such as: Fewer births/small families/reduction in birth rate/fertility rate; Use/access to/availability of/can afford contraception People more educated about using contraception/family planning; women have careers/more women educated;/ higher status Children are expensive; /cannot afford children Abortions are legal/available; Less teenage pregnancy/have children later in life/later marriages; More deaths/increase in death rate; Obesity/heart disease; Alcohol related deaths; AIDS/HIV; Higher DR than BR = 1 Too vague: Government policy Migration High death rate/low birth rate Crime Lack of food Live longer/ageing population/life expectancy decreases People don't need children to work. People not forced by religion to have large families Low infant mortality 4 @ 1 mark	**4**
1(b)(i)	Ideas such as: Africa = increase; Asia = increase (to 2050) followed by decrease/return to same level (by 2100) Europe = decrease 3 @ 1 mark	**3**

Question	Answer	Marks
1(b)(ii)	Ideas such as: Unemployment/not enough jobs; Need to support unemployed workers; Need to improve/more investment needed in/pressure on/not enough/lack of schools; Health care becomes more expensive to provide/pressure on/not enough/lack of healthcare; Poor sanitation/hygiene; Poor water supply; Poor energy/electricity supplies; Tax increases are likely; Increased cost of/need to house population/squatter settlements; Food shortages; / pressure on farmland Increasing cost of imports; Debt/balance of payments deficit; Water/air pollution; Traffic congestion; / pressure on public transport Reduces GNP Poverty/crime/spread of disease accepted as developed point Too vague: Noise Out migration Deforestation Overpopulation Civil war Increasing elderly population/need for more pensions etc 5 @ 1 mark or development	**5**

Question	Answer	Marks
1(c)	Levels marking <u>Level 1</u> (1–3 marks) Statements including limited detail which describe the positive and/or negative impacts of a policy used to influence population growth. <u>Level 2</u> (4–6 marks) Uses named example. Developed statements which describe the positive and/or negative impacts of a policy used to influence population growth. (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 positive and negative impacts of a policy used to influence population growth, including some place specific reference. Description of policy only = 0 <u>Content Guide:</u> Policy could be to reduce or increase population growth and could refer to natural growth or migration. Answers are likely to refer to: Impact on birth rates/population growth/population grows/decreases female infanticide Imbalance of sex ratios Ageing population Reduced workforce Financial impacts for families etc. E.g. China One-Child Policy • The fertility rate decreased after 1980. • The birth rate decreased after 1980. • The overall rate of natural increase (the difference between the birth rate and the death rate) declined. • The Chinese government estimated that some 400 million births were prevented by the policy, although some analysts dispute this finding. • As sons were generally preferred over daughters, the overall sex ratio in China became skewed toward males. In 2016 there were 33.59 million more men than women. • Because of the preference for sons, there was a rise in the number of abortions of female fetuses. • The number of female babies killed, abandoned, or placed in orphanages increased as a result of the policy. • Benefits for families of complying with the policy, including financial perks and greater employment options. • Millions of Chinese parents had to endure strict enforcement methods of the policy, including forced sterilisation and forced abortions.	**7**

Question	Answer	Marks
1(c)	• In families that already had one child, the births of additional children – in violation of the one-child policy – were often undocumented, leading to many problems later on for those children as they struggled to receive an education or find work. • Even after the one-child policy was rescinded, China's birth and fertility rates remained low, leaving the country with a population that was aging too rapidly as well as a shrinking workforce. <u>Place specific reference is likely to consist of:</u> Named parts of the chosen country, Population data Specific aspects of policy/dates etc.	

Question	Answer	Marks
2(a)(i)	Fig. 2.4 1 mark	**1**
2(a)(ii)	Ideas such as: Large numbers of car owners; Narrow roads/outdated/inadequate road system; On street parking/lack of parking areas; Many people travel to work by car; Delivery vehicles/heavy lorries etc. Too vague: Many vehicles Buses/trams cause hold ups Road works 1 MAX for impacts e.g. late to work/air pollution = 1 2 @ 1 mark	**2**
2(a)(iii)	Ideas such as: Less people will use their cars/reduces cars /vehicles on roads; Buses/trams/trains hold large numbers of people; Buses/trams travel on separate roads/lanes; Less need for cars to be parked on streets/near workplaces/in CBD etc. Buses/trams/trains will link CBD/industry/housing areas = too vague 3 @ 1 mark	**3**

Question	Answer	Marks
2(a)(iv)	Ideas such as: Widen roads; Build ring roads/bypasses Congestion charging; Cycle lanes/cycle hire; Car sharing schemes; More traffic police; Tidal flow schemes; One-way streets/roundabouts/traffic lights; Park and ride; Number plate restrictions; Create more parking spaces etc. Note: One mark for each correct scheme and one mark for explanation of how it is likely to reduce congestion. 2 + 2 marks Too vague: Use bikes/walk So there are fewer cars Work from home/staggered working hours	**4**
2(b)(i)	Ideas such as: More Sulphur dioxide in Ahmedabad; More nitrogen dioxide in Delhi; More particulate matter in Delhi 3 @ 1 mark No credit for statistics Delhi is more polluted	**3**

Question	Answer	Marks
2(b)(ii)	Ideas such as: Causes respiratory disease/breathing difficulties/chest complaints/heart complaints; Brings on asthma/lung cancer/bronchitis; Irritates eyes/skin; Causes smog/affects visibility; Increases travel time/danger; Makes paintwork/windows/washing etc dirty; Weathers/corrodes stonework on buildings; Pollutes drinking water Development = More time off work; Reduces life expectancy; 5 @ 1 mark or development Too vague: Health problems It is toxic/poisonous Out migration Acid rain No credit for: Poisons people/die Global warming Mental health	**5**

Question	Answer	Marks
2(c)	Levels marking <u>Level 1</u> (1–3 marks) Statements including limited detail which identify inequality by reference to difficulties faced by some people in an urban area. <u>Level 2</u> (4–6 marks) Uses named example. Developed statements which describe inequalities in an urban area. (**Note:** Max 5 if no named or inappropriate example) <u>Level 3</u> (7 marks) Uses named example. Comprehensive and accurate statements which explain the causes of inequality in an urban area, with some place specific reference. <u>Content Guide:</u> Answers are likely to refer to; Employment/unemployment Low/high wages Differences in quality of housing Availability of water/electricity Access to education Variation in access to health care/hospitals/clinics Impacts of migration on urban area/growth of squatter settlements Variation in access to welfare Gender inequality etc. <u>Place specific reference is likely to consist of:</u> Locational details, Specific details of the urban area chosen etc.	**7**

Question	Answer	Marks
3(a)(i)	(Natural) arch 1 mark	**1**
3(a)(ii)	Ideas such as: Bare rock; Jagged edges; Steep/vertical; Pillar of rock/rock separated from main cliff; Joined to cliff by ‘roof’; Tall/narrow arch; Vertical rock strata 2 @ 1 mark	**2**

Question	Answer	Marks
3(a)(iii)	Ideas such as: Undercut/erodes at base; Top part becomes unsupported Cliff/arch / feature X collapses; Isolated stack remains/formed (some distance from cliff); Stack erodes further/reduces in height/forms a stump No credit for hydraulic action/abrasion or explanation 3 @ 1 mark	**3**
3(a)(iv)	Ideas such as: Differential erosion takes place; Different rock types outcrop along the coast/alternating hard and soft rocks/discordant coast; Hard rocks remain/ resist erosion; And Form headlands Soft rocks are eroded (rapidly); Bays form where rock is soft No credit for hydraulic action/abrasion or explanation 4 @ 1 mark	**4**
3(b)(i)	Ideas such as: Inverted triangular shape/arcuate/V shape/inverted cone; Widens as it gets closer to sea; 180–220 km wide/east to west; 140–160 km long/north to south; 25 000–35 000 square km No credit for: Distributaries Curved 3 @ 1 mark	**3**
3(b)(ii)	Ideas such as: River is getting close to sea/mouth/meets the sea; Land is flat; Lots of materials are transported from upstream; Reduction in speed of flow/energy; Excess of sediment load cannot be carried further; Deposition; Splits into/forms distributaries/river splits up; Flocculation/deposited material clumps together; Lack of tides to remove materials; Colonization by vegetation etc. 5 @ 1 mark or development Too vague on its own: there are distributaries	**5**

Question	Answer	Marks
3(c)	Levels marking Level 1 (1–3 marks) Statements including limited detail which describe the hazards and/or their impacts as a result of natural processes. Level 2 (4–6 marks) Uses named example. More developed or linked statements which describe the hazards and/or their impacts as a result of natural processes. (**Note:** Max 5 if no named or inappropriate example) Level 3 (7 marks) Comprehensive and accurate statements which describe the hazards and their impacts as a result of natural processes including place specific information. Content Guide: Answers are likely to refer to: Coastal erosion Coastal flooding Tropical storms/hurricanes/cyclones Strong winds tsunami Cliff collapse Damage to housing Damage to specific infrastructure – e.g. roads etc. Place specific reference is likely to consist of: Locational details, Specific details of the areas affected/date etc. No credit for: River floods	**7**

Question	Answer	Marks
4(a)(i)	Wind 1 mark	**1**
4(a)(ii)	The arrow points in the direction wind is coming from; Read display of wind speed/rotations are counted/recorded 2 @ 1 mark	**2**

Question	Answer	Marks
4(a)(iii)	Ideas such as: At a high point; E.g. On a roof/church tower; In an open area/not surrounded by buildings/trees; So wind is not blocked/slowed down; Fenced area; To avoid tampering etc. 1 mark reserved for description/explanation Too vague on its own: Above building/high up 3 @ 1 mark	**3**
4(a)(iv)	Ideas such as traditional instruments are: Slow/do not give instant readings/waste time/digital are quicker to use; not accurate/imprecise/do not give exact figures/digital are more accurate; not easy/not clear to read/digital clearer to read; chance of error/misreading/digital less chance of error; cannot be linked to a computer/automatic logging/store data etc. Too vague: In a fixed place/not portable/bulky It is done manually It needs training/skills They are difficult to use/understand Not reliable No credit for: They can get broken 4 @ 1 mark	**4**
4(b)(i)	Ideas such as: Larger range on 31 January/smaller range on 1 January; Range of 3 to 4 °C on 1 January; 14 to 15 °C on 31 January 3 @ 1 mark	**3**

Question	Answer	Marks
4(b)(ii)	Ideas such as: Use maximum and minimum thermometer/Sixes thermometer; Keep it in a Stevenson screen; Check every 24 hours/every day; Check at same time of day; Read off minimum temperature at base of metal indicator on LHS; Read off maximum temperature at base of metal indicator on RHS; Or (read temperature at base of metal indicator/index = 1); Reset thermometers; By sliding metal indicators with magnet etc.; No credit for: Graph Table 5 @ 1 mark or development	**5**

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Question	Answer	Marks
4(c)	Levels marking Level 1 (1–3 marks) Statements including limited detail which explain why flooding occurs. Level 2 (4–6 marks) Uses named example. More developed statements which explain why flooding occurs. (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: Heavy rainfall, High discharge Rainfall over a long period of time, Impermeable rocks, Rocks reach saturation level, Snow/ice melt, Deforestation, Urban development Lack of flood defences Deposition on river bed Low/flat land beside river/flood plain etc. Must be river flooding No credit for: tsunami, high tides, rising sea level Place specific reference is likely to consist of: Locational details, named places along the river/in the drainage basin, specific details of rainfall amounts, date/time etc.	**7**

Question	Answer	Marks
5(a)(i)	On graph (no need for country name) 1 mark	**1**
5(a)(ii)	New Zealand…..Namibia…..St. Lucia (Correct order needed) 2 marks if all are correct 1 mark if 1 is correct 2 @ 1 mark	**2**

Question	Answer	Marks
5(a)(iii)	Maldives (1 mark) It has the highest number of jobs in the tourist industry; It has the largest share of total employment. /largest percentage of workers Note: No credit if Bahamas or Cayman Islands are chosen. No credit for statistics. 3 @ 1 mark	**3**
5(a)(iv)	Ideas such as: Working in hotels/resorts/spa (e.g. receptionist, cleaner); Working in restaurants (e.g. waitress, chef etc.); Tour guide; Worker in tourist information centre; Bus/taxi driver; Airport worker; Ferry worker; Worker in gift shop/souvenir shop/selling souvenirs etc.; Cleaning/maintenance of beach/streets/parks; Lifeguard; Swimming/diving instructor etc.; Staff working at attractions/entertainments or e.g.; Worker in building / construction industry; Note: Answer must refer to jobs/work. No credit for: Hotels, restaurants etc. Services/Tertiary Farming 4 @ 1 mark	**4**
5(b)(i)	Ideas such as: Overall increase/from 2010 to 2018; Increased in 2011/2010 to 2011/2012/2013/2014; Decreased from 2014/in 2015/from 2014 to 2015; Steep increase from 2015/2015 to 17; gentle increase from 2017 Or increases from 2015 to 2018 Too vague: Increase No credit for: Statistics Fluctuated (dates needed for all except 1st mark scheme idea) 3 @ 1 mark	**3**

Question	Answer	Marks
5(b)(ii)	Ideas such as: Deforestation/loss of vegetation; Loss of habitat; Death/extinction/migration of species/animals killed/hunted; Animals choke on litter or e.g.; Reduced biodiversity; Animals scared/disturbed by noise Loss of food supplies (for animals); Impact on food chains; Pollution of water/oil spills;/ waste in water Atmospheric pollution; Damage to coral etc. Too vague: Noise Animals disturbed Litter 5 @ 1 mark or development	**5**

Question	Answer	Marks
5(c)	Levels marking <u>Level 1</u> (1–3 marks) Statements including limited detail which identify, describe or list natural attractions which have led to the development of the tourist industry. <u>Level 2</u> (4–6 marks) Uses named example. More developed statements which explain how natural attractions have led to the development of the tourist industry. (**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 could refer to: Landscape (e.g. cliffs. Bays, beaches, mountains, sand dunes etc.) Natural vegetation (e.g. forests, palm trees etc.) Weather and climate (e.g. temperatures, sunshine, snow etc.) Sea/ocean (e.g. clear, warm, coral reefs etc.) Wildlife No credit for reference to formation of landforms/human attractions Reference to activities only to be credited as Level 2 explanation <u>Place specific reference is likely to consist of:</u> Locational details Named features etc.	**7**

Question	Answer	Marks
6(a)(i)	Oil (petroleum)/natural gas/coal etc No credit for: Petrol Wood 1 mark	**1**
6(a)(ii)	Fertiliser; Pesticides. 2 @ 1 mark	**2**
6(a)(iii)	Ideas such as: Poisonous to aquatic life/harms/kills fish/animals/vegetation; Decreases oxygen in water; Eutrophication; Reduced biodiversity; Reduction of food supplies for predators; Concentration of pollutants higher up food chain; Loss of habitats; Too vague: Damages ecosystems 3 @ 1 mark	**3**
6(a)(iv)	Ideas such as: Carbon dioxide builds up; Forms a layer in the atmosphere; Sun's rays pass through the atmosphere; Rays bounce off/radiate from the surface of the earth; The rays/heat is trapped by the greenhouse gases etc. Too vague: Enhances greenhouse effect 4 @ 1 mark	**4**
6(b)(i)	Graph completion. Deforestation (30%); Agriculture (28%); Correct shading and correct order of key. 3 @ 1 mark	**3**

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Question	Answer	Marks
6(b)(ii)	Ideas such as: Trees are cut down/vegetation is removed; Soil left bare/exposed; Loss of roots/roots hold soil together/nothing to hold the soil; Less interception/loss of canopy/leaves would have intercepted; Ploughing downslope creates gulleys; Wind erosion/wind blows away; Water erosion/surface runoff/washes it away etc. Too vague on their own: Deforestation Arable farming Gathering fuelwood Loss of nutrients Caused by wind/water 5 @ 1 mark or development	**5**
6(c)	Levels marking <u>Level 1</u> (1–3 marks) Statements including limited detail which describe the effects of desertification on people and/or the natural environment. <u>Level 2</u> (4–6 marks) More developed or linked statements which describe the effects of desertification on people and/or the natural environment. MAX 5 if no references to places where desertification is occurring. MAX 6 if only one reference to a place where desertification is occurring. <u>Level 3</u> (7 marks) Comprehensive and accurate statements which describe the effects of desertification on people and the natural environment, including some place references. <u>Content Guide:</u> Answers are likely to refer to: (Natural environment) Changing rainfall patterns, Drought, Vegetation is damaged or destroyed Soil becomes infertile Soil erosion gets worse Extinction of species Reduction of biodiversity. Loss of habitat /(people) Loss of farmland Difficulty producing food/famine, Lack of drinking water, Increased vulnerability to natural disasters Conflict over land, Outward migration etc.	**7**