Cambridge Assessment International Education

Cambridge IGCSE™

GEOGRAPHY **0460/41**

Paper 4 Alternative to Coursework **October/November 2021**

MARK SCHEME

Maximum Mark: 60

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)	An area in which people illegally build homes / without landowners approval An area which lacks basic sanitation / water supply / electricity An area of self-built housing / scrap materials	**1**
1(b)(i)	4.5 km	**1**
1(b)(ii)	On the edge / outskirts **of the city** / around **city** Next to rivers / rivers flow through them On main roads / roads go through them Away from CBD In **4** groups / areas N/NE/E/S/SW/SE **of city** / **CBD** (of city)	**2**
1(b)(iii)	On vacant land / land not already occupied / land which is left / plenty of space (Near to river / water source) **for** drinking / washing / fishing / river for waste disposal (Near to / road) f**or** access to work / industry / CBD 2 @ 1	**2**

Question	Answer	Marks
1(c)(i)	<u>20 people:</u> Not enough for a **reliable** sample Too few responses **to** reach a conclusion / make study worthwhile / get evidence for hypothesis Not represent all people / not representative Not get a full range of answers / small range of answers <u>500 people:</u> Take too long / long time Too many responses **to** produce the results from / analyse / put into data table Might not find 500 people	**2**
1(c)(ii)	(Scrap materials) Collect rainwater or water from the river No electricity supply No legal tenure Other informal job All correct for 1 mark	**1**
1(d)(i)	Plot scrap materials = 24%	**1**
1(d)(ii)	Plot ‘rent from city authority’ = 42%	**1**

Question	Answer	Marks
1(d)(iii)	**In settlement B:** Most / more / lots of / over half houses built of brick **OR** few / less than half built out of corrugated iron / scrap Most / more / lots of / over half houses have taps in them **OR** few / less than half get water from standpipe / river Most / more / lots of / over half get electricity **from** city authority **OR** few / less than half use a cable / have no electricity Most / more / lots of / over half own / rent the house / have right or permission to live there / have legal tenure **OR** few / less than half rent / have no legal tenure **In settlement A: (must specify)** Most etc. houses built of corrugated iron / scrap materials **OR** few etc. built out of brick Most etc. houses use standpipe / river **OR** few etc. have taps in home Most etc. get electricity from cable / have no electricity **OR** few get electricity from city authority Most etc. don't own house / no legal tenure **OR** few etc. own the house In B houses are built of bricks **but** in A houses are built of corrugated iron / scrap In B water comes from tap **but** in A water comes from standpipe / river In B electricity comes from city authority **but** in A electricity comes from cable / no electricity In B people own / rent the house **but** in A people have no legal tenure 4 @ 1	**4**
1(e)(i)	Plot 'selling homemade items' = 22% and 'other jobs' = 19% 1 mark for dividing line at 81% 1 mark for shading	**2**

Question	Answer	Marks
1(e)(ii)	Settlement A Hypothesis is **true** / **correct** – 1 mark reserve (✓HA) OR most work in informal jobs / sector 73% work in informal sector Hypothesis is incorrect / partially correct = 0 (XHA) If no hypothesis conclusion ^HA and credit evidence Settlement B Hypothesis is **false** / **incorrect** – 1 mark reserve (✓HA) OR most work in formal jobs / most don't work in informal jobs / less work in informal jobs 41% work in informal sector OR 59% work in formal sector Hypothesis is true / correct = 0 (XHA) If no hypothesis conclusion ^HA and credit evidence	**4**
1(f)(i)	32	**1**
1(f)(ii)	Services – 1 mark (reserve) Danger of outbreak of disease / named disease / disease spreads Dangerous insects / mosquitoes / rats / insects which carry disease Unpleasant smell Danger of illegal hook-ups to electricity cables No electricity for lights / cooking / appliances / work No clean water to drink / wash themselves	**3**

Question	Answer	Marks
1(f)(iii)	Environment – 1 mark (reserve) Produce rubbish themselves so it could be reduced / cleaned up Unaware of flood danger / unlikely to happen / rare event Warning of flooding / could move away Air pollution may not be obvious / cannot see it / seasonal Can live with these problems / other problems are more important / not affecting their daily life / not immediate problems (like services) e.g., more worried about being evicted / lack of sewers / don't care about environment	**3**
1(g)	Need comparison Method 1 tries to prevent a settlement growing up / move people away / people stay there temporarily **but** method 2 tries to organise / manage how a settlement grows / helps people to settle there Method 1 only allows temporary homes to be built **but** method 2 encourages the building of permanent / long-term homes Method 1 pulls houses down **but** method 2 does provide materials to build Method 1 sees the settlements as a problem **but** method 2 sees the settlements as positive / to be encouraged Method 1 only allowed to build with wood / corrugated iron / scrap materials / no bricks **but** method 2 only build with bricks 2 @ 1	**2**

Question	Answer	Marks
2(a)	Check tide times before setting off / watch for incoming tide / do fieldwork at low tide Avoid slippery rocks / sharp rocks Don't go into sea Take mobile / cell phone / whistle Work in groups / pairs / not alone Tell teacher / adult where you are going Wear protective clothes / waterproof clothes / sunblock / hi-viz jacket / shoes 3 @ 1	**3**
2(b)(i)	Make a line / transect **up / down** the beach **/** away from the sea Put quadrat on ground / beach / throw quadrat Count the number of squares with different types of beach material Do more than one measurement **at each distance** and calculate average	**3**
2(b)(ii)	Classification as sand, shingle or pebbles is subjective / may be classified differently at different sites Types of beach material look similar / difficult to decide what is shingle and what is pebble May be boulder / bare rock / seaweed / other materials / driftwood / litter (in quadrat / on beach)	**1**
2(b)(iii)	Plot sand = 40%, shingle = 35%, pebbles = 25% 2 marks for dividing lines at 40 and 75, 1 mark for shading	**3**

Question	Answer	Marks
2(b)(iv)	**No** / Hypothesis is **false**/ **incorrect /** – 1 mark reserve (✓HA) More change at Beach X / less change at Y (NOT variety) 1 mark for **comparative** statistics e.g. Accept any beach material at 2 distances (5, 25 or 45 m) e.g. At beach X sand = 80% at 5 m and 0% at 45 m **and** at beach Y sand = 90% at 5 m and 100% at 45 m OR Beach X: At 5 m = 80% sand, 15% shingle and 5 % pebbles, at 45 m = (0% sand), 50% shingle and 50% pebbles **and** Beach Y: At 5 m = 90% sand, 10% shingle and (0 % pebbles,) at 45 m = 100% sand, (0% shingle and 0% pebbles) Hypothesis is true / correct = 0 (XHA) If no hypothesis conclusion ^HA and credit evidence	**3**
2(b)(v)	Plot sand = 40%, shingle = 35%, pebbles = 25% Plot with X (don't need 2)	**1**
2(c)(i)	Put tape measure on beach / poles at bottom and top of beach to create profile / transect line Measure equal distance / 10 m Put poles at each end of measured distance OR Put poles at break of slope Measure distance between poles OR Put 2 poles on beach and measure distance between them (1 mark) Students hold poles at either end of measured distance / identified section Make sure they are vertical / same depth / on surface Student holds clinometer / protractor next to top / at agreed height on ranging pole / at eye level Sight other ranging pole at top / agreed height / same height Use clinometer / protractor to measure angle / read angle / degrees / Repeat **along transect** / different distances up the beach	**4**

Question	Answer	Marks
2(c)(ii)	Hypothesis is **true / correct** – 1 mark reserve (✓HA) Beach X is steeper / higher OR beach Y is gentler / lower Beach X is steeper after 30 m / between 30–40 m / between 30–50 m Beach Y is **constant** slope and X has **changing** gradient 1 mark for paired data from both beaches e.g. Beach X rises by / reaches 1 m **and** beach Y rises by / reaches 0.4 m Beach X rises from 0.3 m at 30 m to 1 m at 50 m **and** beach Y rises from 0.2 m at 30 m to 0.4 m at 50 m Hypothesis conclusion is false / partly true = 0 (XHa) If no hypothesis conclusion ^HA and credit evidence	**4**
2(d)(i)	Swash is stronger than backwash More than the frequency of constructive waves	**2**
2(d)(ii)	Pick a rock / pole on beach / person stands in sea / put pole in sea / put float in sea Count number of waves breaking / hitting pole in 1 minute / fixed period of time / specified time / count float going up and down in 1 minute (up to 10 mins) Use watch / chronometer / stopwatch / timer **for** timing / time for one minute Repeat counting / do counting more than once **and** take average	**3**
2(e)	Method such as groyne, sea wall, rip-rap / rock armour, gabion, revetment, beach replenishment, artificial or man-made or offshore reef / mangroves, drainage pipes, marram grass – 1 mark reserve Groynes are wooden barriers on beach at right angles to sea / perpendicular to sea / up and down the beach They trap sediment / reduce / stop longshore drift (Sea) wall is curved / made of concrete Reflects power of wave / breaks waves' energy / waves don't break on cliff Rip rap / rock armour are large boulders at foot of cliff Absorb the energy of the waves / waves don't break on cliff Gabion is a metal cage full of rocks Absorbs the energy of the waves / holds unstable cliff together / waves don't break on cliff	**3**

Question	Answer	Marks
2(e)	Revetment is wooden or concrete barrier Waves break against them / absorb waves' energy / waves don't break on cliff Reef is barrier built out at sea Breaks waves / stop waves reaching land 1 mark for description and 1 mark for explanation	