GradeMax

Cambridge Assessment International Education

Cambridge IGCSE™

GEOGRAPHY **0460/42**

Paper 4 Alternative to Coursework **May/June 2023**

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 May/June 2023 series for most Cambridge IGCSE, Cambridge International A and AS Level and Cambridge Pre-U components, and some Cambridge O Level components.

© UCLES 2023

[Turn over

GradeMax

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.

© UCLES 2023

GradeMax

Question	Answer	Marks
1(a)	**Make sure…** Can communicate / call if in <u>difficulty</u> / call if separated or lost / call in an emergency; **Check the…** To take appropriate / suitable / adequate clothing or example / to see if it is safe OR not dangerous to work / not to work OR postpone / reschedule if storm is forecast / take sunblock; **Organise yourselves…**Someone can get help if one gets into difficulty / one can stay with other while 3rd gets help; **Check the…** See when the sea would be safe to take measurements/ not get cut off by the tide / less dangerous at low tide / dangerous at high tide / avoid risk of drowning.	**4**
1(b)(i)	Pick a rock / pole on beach / stand in sea / put pole in sea / put float in sea / mark line on beach; Count number of waves <u>breaking / hitting pole / passing person / crossing line</u> OR count float going up & down; Use watch / stopwatch to time 1-5 minutes / fixed period of time; Repeat count / count for more time **&** calculate /work out average.	**3**
1(b)(ii)	Draw bar for beach C at 13.3.	**1**
1(c)(i)	Create transect line / measure from low water mark to back of beach /up the beach; Put ranging poles at <u>breaks of slope;</u> Measure distance between poles / breaks of slope; Ranging poles are vertical; Ranging poles rest on surface / equal depth into beach material; Put string / rope / tape at <u>same height</u> between poles; Hold clinometer next to top / at agreed height on lowest ranging pole; Sight other ranging pole at top /agreed height /same height /along string; Read / measure angle / degrees with clinometer; Repeat up beach / move poles up beach / along profile to next site / break of slope.	**4**
1(c)(ii)	Plot angle of slope at beach A – 9° above 1 measurement.	**1**
1(c)(iii)	Plot average angle at beach B – 6.8°.	**1**

© UCLES 2023

GradeMax

Question	Answer	Marks
1(c)(iv)	Hypothesis is **true** – 1 mark reserve (✓HA). There is a positive relationship between average wave frequency and the angle of slope; **OR** Wave frequency and angle of slope highest in C and lowest in A / decreases from C-A; **OR** Wave frequency and angle of slope higher in C and lower in B; Credit 1 mark for comparative data from beach C and beach A e.g., **Average** wave frequency at C = 13.3 per minute and **average** angle of beach = 10.5° and **average** wave frequency at A = 8.1 per minute and **average** angle of beach = 4.9°; **OR** Credit 1 mark for comparative data from beach C and beach B e.g., **Average** wave frequency at C = 13.3 per minute and **average** angle of beach = 10.5° and average wave frequency at B = 9.8 per minute and average angle of beach = 6.8°.	**3**
1(d)(i)	Measure pebble with tape / ruler / callipers / pebbleometer / micrometer / screw gauge; Adjust callipers / pebbleometer to hold pebble / put pebble between teeth of callipers / blocks of wood; Measure long axis / longest side / maximum length; Read in mm / cm.	**3**
1(d)(ii)	Plot histogram for beach C. 0 – 5cm = 7. 5.1 – 10cm = 9. 10.1 – 15cm = 14.	**3**

© UCLES 2023

<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>1(d)(iii)</td><td>True for C and A but not true for C and B;

TRUE STATEMENT: Pebbles are larger and wave frequency is higher at C than A;

Data to support TRUE:
14 pebbles between 10.1–15cm at C where average wave frequency is 13.3 per minute and 4 pebbles at A between 10.1–15cm where wave frequency is 8.1 per minute;
OR
Pebbles are larger and wave frequency higher at B than A;
15 pebbles between 10.1–15cm at B where average wave frequency 9.8 and 4 pebbles at A between 10.1–15cm where wave frequency is 8.1;

NOT TRUE STATEMENT:
Pebbles are larger at B than C, but wave frequency is lower at beach B;

Data to support NOT TRUE:
2 pebbles between 15.1–20cm at B where average wave frequency is 9.8 and 0 pebbles between 15.1–20cm at C where wave frequency is 13.3;
OR
15 pebbles between 10.1–15 at B where average wave frequency is 9.8 but 14 pebbles between 10.1–15 at C where average wave frequency is 13.3;</td><td>4</td></tr>
<tr><td>1(e)</td><td><table><tr><th>constructive waves</th><th>destructive waves</th></tr><tr><td>less frequent/less than 10 waves break per minute</td><td>more frequent/more than 10 waves break per minute/</td></tr><tr><td>swash stronger than backwash</td><td>backwash stronger than swash</td></tr><tr><td>waves far apart/long wavelength</td><td>waves close together/short wavelength</td></tr><tr><td>low wave height</td><td>high wave height</td></tr></table></td><td>3</td></tr>
</table>

GradeMax

Question	Answer	Marks
2(a)	Natural.	**1**
2(b)(i)	**Advantage**: Removes bias; Easy to select people to answer / can just pick anyone / quick. **Disadvantage:** May not result in a representative sample / may be unbalanced; Difficult / longer to organise / takes time <u>if random number tables</u> used.	**2**
2(b)(ii)	**Systematic:** Choose people at regular / same / equal intervals; Every nth **OR** tenth person they meet. **Stratified;** Find out gender or age <u>groups</u> of residents; Ask a balanced number or proportionate number of people of different age group and gender; **OR** Get a balance of people of different ages or gender.	**3**
2(c)(i)	Data collected by student / person doing survey / data not collected by anybody else before / directly from source / first hand / get yourself / collected from fieldwork / raw data / new data.	**1**
2(c)(ii)	Language difficulties / speak different language; People not understanding the questions / can't read or write / illiterate; People not cooperating / busy / not interested / don't want to / boring / may lie / answers incorrect / irrelevant; Not willing to answer personal questions / don't trust use / keep privacy; People do not know answers to the questions; Not enough people to answer the questionnaire survey; May be incomplete / filled in wrongly / too many ticks.	**2**
2(c)(iii)	Interview.	**1**
2(d)(i)	Pie graph completion for Kanyam: No formal education = 25, primary = 17, secondary = 43, higher = 15. Correct shading.	**3**
2(d)(ii)	Hypothesis is **false** – 1 mark reserve (✓HA). <u>1 mark for statement comparing the two villages</u> e.g., More inhabitants of Kanyam studied at higher / secondary level; **OR** Fewer inhabitants of Kanyam have no formal education; **OR** More inhabitants of Chamaita studied at primary level; <u>1 mark for comparative data</u> e.g., 15% studied at higher level in Kanyam and 8% in Chamaita / by 7%; 25% have no formal education in Kanyam and 30% in Chamaita / by 5%; 40% studied at primary level in Chamaita and 17% in Kanyam / by 23%.	**3**

© UCLES 2023

GradeMax

Question	Answer	Marks
2(e)(i)	Divided bar completion for lighting used in Kanyam: Electricity = 46%, kerosene = 29%. 1 mark for dividing line at 71% & 1 mark for shading.	**2**
2(e)(ii)	**1 mark MAX for cooking statement:** Firewood is most important fuel for cooking in Chamaita and electricity in Kanyam; Charcoal / firewood is more important for cooking in Chamaita; Biogas / electricity / LPG is more important for cooking in Kanyam. **1 mark MAX for lighting statement:** Candles are most important fuel for lighting in Chamaita and electricity in Kanyam; Electricity is more important for lighting in Kanyam; Battery / candles / kerosene more important for lighting in Chamaita. **1 mark MAX for comparative data supporting a statement** e.g., Firewood is used by 46% for cooking in Chamaita and electricity is used by 39% in Kanyam; Electricity is used by 46% for lighting in Kanyam and 30% in Chamaita.	**3**
2(f)(i)	Draw bar for tourist guide = 22% in Kanyam.	**1**
2(f)(ii)	Ideas such as: Tourism is the most important industry in Kanyam / examples of tourist activity; Brings money / jobs in the village; Tea plantation / secondary industry / factory in Kanyam; Money / jobs brought to the village; More tertiary / service jobs in Kanyam; Higher income in Kanyam; Fewer / less subsistence farmers / primary activity in Kanyam; 5% subsistence farming in Kanyam but 90% in Chamaita; More formal jobs in Kanyam; Higher paid employment.	**3**

© UCLES 2023

GradeMax

Question	Answer	Marks
2(g)	Isolation due to lack of roads is biggest / most common problem; **so** hard to attract industry; bring in / move out OR import / export materials / products; means people can't travel to work / town easily / less investment / money; Young adults move away for jobs; so causes 'brain drain'; work force is reduced; aging population left to farm/work; Lack of electricity so can't develop secondary / tertiary industry; unattractive to new businesses; Lack of piped water supply so farming limited; less irrigation / affected by drought; dependent on rainfall; causes hygiene issues; Poor sanitation so increased disease / poor health; prevents people working; more die / population reduced so lower workforce; Insufficient teachers in the schools so less educational opportunities; children less skilled; cannot read + write.	**5**

© UCLES 2023