Cambridge Assessment International Education

Cambridge IGCSE™

GEOGRAPHY **0460/43**

Paper 4 Alternative to Coursework **May/June 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 May/June 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)	Stream which **joins** another stream / river When / where a stream joins the main river	**1**
1(a)(ii)	Area drained by a river / area from where all water flows into river / catchment area Area where all the rain goes into the river	**1**
1(b)	Learn how to use equipment Practise fieldwork techniques 2 @ 1	**2**
1(c)(i)	**Measure** 10 metres Put **poles or sticks** at measured distance / 10 metres along river / at start and end of measured distance Put **float** / orange / ball in river at start Start **stopwatch or timer** when float / orange is put in river **Measure time** it takes to travel the measured distance / stop stopwatch or timer when float reaches end of measured distance	**4**
1(c)(ii)	Floats got stuck / hit obstacles / vegetation in channel Error **in** calculation / measuring distance / measuring time Float doesn't move in straight line Float affected by wind 2 @ 1	**2**
1(d)(i)	Put **measuring tape** across river / channel / from one bank / side to the other Keep tape measure taut / horizontal / stretched / above water / parallel to water level Measure at right angles to bank / straight across channel **Read** width / measurement on tape measure Rest ruler / measuring stick on river bed / bottom of river (NOT into bed) Make sure ruler is upright / vertical / straight / perpendicular / 90º Measure depth at different places / intervals across channel / every metre / three points across river Read off the scale where water level reaches / where ruler is wet / measure the wet section 1 mark reserve for width and depth	**4**
1(d)(ii)	3 plots correct = 2 marks 1 or 2 plots correct = 1 mark Line joining points – must intersect 0 at both banks = 1 mark Ignore shading	**3**

Question	Answer	Marks
1(e)(i)	3.45 (width) × 0.31 (depth) 1.07 sq m / 1.0695	**2**
1(e)(ii)	Hypothesis is **true –** 1 mark reserve (✓HA) OR Discharge **does** increase downstream 1 mark for **paired** data from any two sites to show relationship e.g. site 1 / upstream = 0.12 cumecs and site 3 / downstream = 0.48 cumecs No credit if Hypothesis conclusion is incorrect / false If no hypothesis conclusion credit evidence	**2**
1(e)(iii)	Tributaries / other rivers join Bring water from other areas of drainage basin Larger catchment area downstream Reason for decrease in discharge, e.g. a dam	**1**
1(f)(i)	Measure certain / equal distance / 10 m (5 m or more) / where the slope breaks Students hold / put poles at either end of measured distance / at specific distance / 5–10 m away from each other / at break of slope Put two poles vertically / perpendicular / upright / 90º Student holds clinometer / protractor next to top / at certain height on pole / at eye level Lines up identified position / top on other pole / look along tape to line up with other pole Student uses clinometer / protractor to measure / record angle / read off angle / read off degrees NOT gradient	**4**
1(f)(ii)	Plot 6.3 (º) at site 3 (6.2 – 6.3)	**1**
1(f)(iii)	Hypothesis is **true / support** hypothesis / **Yes** – 1 mark reserve (✓HA) Credit paired **average** data from different sites to 2 marks max 3 sites + data = 2 marks, 2 sites + data = 1 mark e.g. 16.3º at site 1, 10.7º at site 2, 6.3º at site 3 OR 4.6º decrease between sites 1 and 2, 5.4º decrease between sites 2 and 3, 11.4º decrease between sites 1 and 3 – 1 mark each No credit if Hypothesis conclusion is incorrect / false If no hypothesis conclusion credit evidence	**3**

<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>2(a)(i)</td><td>Climate data is secondary OR
Climate data is average OR
Climate data is long-term / seasons / months / year / annual

Weather data is primary OR
Weather is individual figures OR
Weather is short-term / varies daily / changes every day</td><td>2</td></tr>
<tr><td>2(a)(ii)</td><td>Soil (type)
Altitude / height
Gradient</td><td>1</td></tr>
<tr><td>2(b)(i)</td><td>Land use: Rough grazing above 200 m and grassland / woodland below 200 m
Field size: Smaller fields below 200 m</td><td>2</td></tr>
<tr><td>2(b)(ii)</td><td>6</td><td>1</td></tr>
<tr><td>2(b)(iii)</td><td>Rectangular / square / oblong / trapezium / rhombus / parallelogram</td><td>1</td></tr>
<tr><td>2(b)(iv)</td><td><table><tr><th></th><th>Bryn Du farm</th><th>Home Park farm</th></tr><tr><td>arable</td><td></td><td>✓</td></tr><tr><td>pastoral</td><td>✓</td><td></td></tr><tr><td>lowland</td><td></td><td>✓</td></tr><tr><td>upland</td><td>✓</td><td></td></tr></table>4 ticks correct = 2 marks
2 or 3 ticks correct = 1 mark</td><td>2</td></tr>
<tr><td>2(c)(i)</td><td>Completing pie graph – grassland and rough grazing
1 mark for dividing line at 65%
1 mark for shading (horizontal lines)</td><td>2</td></tr>
</table>

Question	Answer	Marks
2(c)(ii)	NO hypothesis mark Arable farming or crops with low(er) rainfall / pasture or grassland or rough grazing / or animals with high(er) rainfall Arable farming or crops with high(er) temperature / pasture or grassland or rough grazing or animals with low(er) temperature Arable farming or crops on low(er) land **/** pasture or grassland or rough grazing or animals on high(er) land Arable farming or crops on flat(ter) land / pasture or grassland or rough grazing or animals on steep(er) land Arable farming or crops with peat or organic soil / pastoral farming or grassland or rough grazing or animals on loam or clay soil Credit comparable data which **supports a statement** to 2 marks maximum but not reserve e.g. January temperature at Home Park = 5º and at Bryn Du = 4º July temperature at Home Park = 19º and at Bryn Du = 16º rainfall at Home Park = 550 mm and at Bryn Du = 1350 mm height at Home Park = 4 m (2–8) and at Bryn Du = 200 m (180–240)	**4**
2(c)(iii)	(Looking for a reason) Climate Crops need warm(er) temperatures **to grow** (Accept plants) High rainfall results in **soil being too wet** to grow crops Crops cannot grow at low temperatures Relief Steep(er) slope – too steep for **machinery** / **sheep are agile** Gentle slope suits **mechanisation** Steep(er) slope – runoff **removes soil nutrients** / **soil is thinner** Soils fertile / rich / deep soils help crop to grow / arable infertile / poor / thin more suited to grassland / animals / pasture 3 @ 1	**3**
2(d)(i)	Plotting labour and machinery costs on bar graph Labour = £20 000, machinery = £68 000 Ignore shading 2 @ 1	**2**
2(d)(ii)	Different units (of measurement) Includes number / kg / tonnes (need 2) Bar graph only shows one unit of measurement	**1**

Question	Answer	Marks
2(d)(iii)	Hypothesis is **false** – 1 mark reserve (Input) Costs are **higher** on Home Park / **lower** on Bryn Du Costs are twice as much on Home Park Accept **'only'** for comparison if using the two total amounts Example of different outputs such as wheat from Home Park and lambs from Bryn Du OR Crops from Home Park and animals from Bryn Du No credit for statistics No credit if Hypothesis conclusion is true If no hypothesis conclusion credit evidence	**3**
2(e)	Interview Use a questionnaire Credit example of questions for 1 mark Make **more** visits / visit in different seasons / visit **again** Stay on the farm for a few days / work-experience Watch / observe the farmer / worker Search online / books / secondary data 3 @ 1	**3**
2(f)	If crops fail the farmer can depend on animals / if animals die farmer can rely on crops / spread the risk / if one fails can stay in business Animal manure can be used for crops / as fertiliser Crops / crop waste can be used to feed animals Farmer can use all types of land / e.g. use fertile soil for crops and infertile soil for grazing Work will be spread throughout the year Income will come into the farm at different times of year / different sources of income / access to different markets / sell crops and livestock Farmer can adapt to changes in demand 3 @ 1	**3**