Cambridge Assessment International Education

Cambridge IGCSE™

GEOGRAPHY **0460/42**

Paper 4 Alternative to Coursework **May/June 2022**

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 2022 series for most Cambridge IGCSE, Cambridge International A and AS Level and Cambridge Pre-U components, and some Cambridge O Level components.

© UCLES 2022

[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.

© UCLES 2022

Question	Answer	Marks
1(a)(i)	A stream which flows **into** / joins /links / connects **to** river **(1)**	**1**
1(a)(ii)	Examples An area drained by a river (1) Where tributaries flow into a river (1) An area surrounded by a watershed (1) (1 + 1)	**2**
1(b)(i)	Examples Use ranging poles to mark out certain distance / 5–10 m distance / at start and end of distance (1); Use tape measure to measure fixed distance / 5–10 m along river (1); OR: Put 2 ranging poles 10 m apart using a tape measure' = **2 marks** Put float (into river) at start of measured distance / at first pole (1); Start stopwatch / timer when float is put in river (1); Stop stopwatch / timer when float reaches end of measured distance / reaches second pole (1); Record time taken to travel measured distance (1); (1 + 1 + 1 + 1)	**4**
1(b)(ii)	**Average**: **20.4** (seconds) If looks like 5 after 20.4 assume it's an s. **Velocity**: $\frac{\mathbf{10}}{\mathbf{20.4}}$ (1 + 1)	**2**
1(b)(iii)	Examples Float may get stuck / obstructed / rocks / plants in way (1); Float may be affected by wind (1); Float doesn't move in a straight line / takes different route (1); Student error in timing / measuring distance / putting float different place (1); (1 + 1)	**2**
1(c)(i)	Middle of channel = 0.72 m / s; Outside bank (right side) = 0.77 m / s; 1 mark for each plot; ignore shading. (1 + 1)	**2**

Question	Answer	Marks

1(c)(ii)	*The hypothesis is only true for some meanders* – 1 mark reserve
	(TICK ✓HA);
	
	True for meanders 2 and 3 OR False for meander 1 (1 Reserve);
	
	TRUE: Credit supporting data for 1 mark max
	e.g. meander 2 outside bank = 0.33 m / s and others = 0.3 m / s and 0.26 m / s (1D);
	OR
	e.g. meander 3 outside bank = 0.77 m / s and others = 0.72 m / s and 0.66 m / s (1D);
	
	FALSE Credit supporting data for 1 mark max
	Inside bank = 0.51 m / s and both others = 0.46 m / s OR 0.05 m / s less (1D);
	
	Hypothesis is true / false for all three meanders = 0 (XHa)
	If no hypothesis conclusion ^HA and credit correct evidence
	
	(1HA + 1R + 1D + 1D)
		4

1(c)(iii)	Hypothesis is true for **site 1 (TICK ✓ HA);** (Fastest) Middle = 0.53 m / s and others = 0.36 m / s and 0.4 m / s (1D); (1HA + 1D)	**2**
1(d)(i)	Examples: Need refs to equipment. Place **measuring tape / rope** / **string** across channel / from one bank to other (1); Make sure the **tape/rope** is taut / stretched (1); Put **ruler / measuring stick** / **ranging poles** in water to touch bed **OR** lower **pebble and string** to touch riverbed (1); **Ruler** must be vertical (1); Take reading at water surface / measure wetted length of ruler / measuring stick / string (1); (1 + 1 + 1)	**3**
1(d)(ii)	Plot **two** points on cross-section (2.8 m = 0.1 m, 3 m = 0.08 m) (1); Complete line and shade river channel (1); (1 + 1)	**2**
1(d)(iii)	Examples: Can be from straight section point of view. Must be comparative Meander is wider / distance longer across OR from left bank (1); Meander is deeper (1); Meander has larger **OR** bigger area / cross-section (1); Meander is deeper at side and straight section is deeper in middle (1); Meander bed is more even / regular / smooth (1); (1 + 1 + 1)	**3**

Question	Answer	Marks
1(e)	Examples: 2 MAX on outside and on inside. Stronger / faster current on outside / river cliff (1); Erosion / undercutting on outside **OR** erosion where the current is fast (1); Weaker / slower current on inside / slip-off slope (1); Deposition on inside **OR** deposition where the current is slow (1); (1 + 1) + 1	**3**

Question	Answer	Marks
2(a)	**Row 2**: Modernisation of industry (1); **Row 5**: Introduction of new technology (1); (1 + 1)	**2**
2(b)(i)	Examples Decisions are subjective / personal opinions / different perspective (1); Different backgrounds (1); Survey done at different times (1); Looking at different parts of the site / from different angle or direction (1); Unsure of descriptors (1); No pilot study to get consistency (1); (1 + 1)	**2**
2(b)(ii)	Examples Work together / with more students (1); Compare / work out average results / look for anomalies (1); Do survey at same time / same day (1); Agree/discuss what descriptors mean (1); Do a pilot survey (1); (1 + 1)	**2**
2(c)(i)	Site 14	**1**
2(c)(ii)	Noise level	**1**
2(c)(iii)	Markings to be equal 5mm gaps like the rest. Site 15 = –3 (Line to end approx. at coast – 15 mm long); Site 16 = + 7(Line to end approx.. 2 mm from top of frame – 35 mm long); (1 + 1)	**2**
2(c)(iv)	Site 6: 450 m distance and + 5 EQ (Need site number + plot) Site 17: 2000 m distance and –2 EQ (Need site number + plot) (1 + 1)	**2**

Question	Answer	Marks
2(c)(v)	Hypothesis is **false** – 1 mark reserve (✓HA); There is no relationship between distance from village + EQ score **(1 reserve);** Credit 1 statement and supporting data Example 1: Two sites which are the same distance and different EQ score (1) e.g. Sites 11 and 15 are both 1540 m distance but 11 = –2 and 15 = –3 (1D); Example 2: Two sites which have same EQ score and different distance (1) e.g. sites 5 and 10 both have 0 EQ score but 5 is 300 m and 10 is 1050 m (1D); Example 3: Show pattern high/low/high or low/high/low **OR** increase/decrease or decrease/increase **OR** up/down or down/up (1) e.g. Site 3/150 m scores EQ –3; to Site 8/675 m with EQ of + 8; then at Site 14/1550 m with EQ of –6 (1D); Hypothesis conclusion is true / partially true = 0 (XHa) If no hypothesis conclusion ^HA and credit evidence (1HA + 1R + 1 + 1D) Accept grouped sites/EQ scores if data correct.	**4**
2(d)	**1 mark reserve for name, 2 marks for description** Systematic: (1R); Regular intervals / regular pattern / equal pattern (1); Every tenth person / nth person (1); Random: (1R); Ask anybody / next person / no pattern (1); Use random number tables / pick numbers out of a hat to generate order to ask people (1); Example e.g. if no. 6 selected ask the 6th person (1); Stratified: (1R); Gender / age balance / different age groups / different genders (1); Choose population by type / socio-economic status / reflects total population (1); If no name / incorrect name of method, credit accurate description to 2 max If give right method then describe different method only credit method name	**3**
2(e)(i)	Examples Finish interview (1); Go to another person / move on (1); Tick the NO box / don't ask Q2 + 3 / exclude results (1);	**1**

Question	Answer	Marks
2(e)(ii)	More modern services = 42; Air pollution = 59; 1 mark for each plot; ignore shading (1 + 1)	**2**
2(e)(iii)	More <u>answers</u> for problems (1); <u>Credit 1 reserve mark for data</u> 347 problems and 323 benefits OR 24 more problems (1); (1 + 1RD)	**2**
2(e)(iv)	<u>Examples: Only credit data if supports a correct statement.</u> <u>J</u>obs and income has highest **OR** most number of answers **OR** more answers than others / benefits (1); 82 answers (1RD); <u>I</u>mproved standard of living has more answers than most benefits (1); 76 answers (1RD); (1 + 1RD)	**2**

© UCLES 2022

Question	Answer	Marks
2(f)	**NOTE: Weather station is traditional; not computer/digital.** **Rainfall** Use a rain gauge (1); Put rain gauge in ground / keep tip or lip above ground (1); Put funnel and jar or beaker in casing / gauge (1); Pour collected water into measuring cylinder (1); Read cm / mm / ml off scale (1); Empty cylinder / jar after measuring (1); Take reading every day / same time / fixed time period / 24 hrs (1); Put data in a table / chart (1); Accept use of pluviometer. **Temperature** Use a thermometer (1); Put thermometer in Stevenson Screen (1); Read thermometer every 24 hours / fixed period of time / everyday (1); Look at the indices (markers) showing the minimum **and** maximum temps (1); Read off the meniscus / index (1); Read at eye level (1); Use magnet to reset / button to reset indices (1); Read off in °C/°F (1); Put data in table / chart (1); **Wind speed – not throw grass in air/windsock.** Use an anemometer (1); Hold an anemometer in the air / put on a roof (1); Do the task away from buildings / obstruction / in open area (1); Cups / disks spin / rotate (1); Read meter every 24 hours / fixed time / everyday (1); (Read) km / h / mph / m / s / knots (1); Put data in table / chart (1); (1 + 1 + 1 + 1)	**4**