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Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

GEOGRAPHY **0460/43**

Paper 4 Alternative to Coursework **October/November 2018**

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.

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This syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **7** printed pages.

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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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Question	Answer	Marks
1(a)(i)	Source	**1**
1(a)(ii)	Confluence	**1**
1(b)(i)	Slippery surfaces in and around the river	**1**
1(b)(ii)	Slippery surfaces: wear suitable shoes / boots / work with a partner / don't work alone / use a stick for support Fast currents: avoid the area of fast water or deep water / work with partner / don't work alone / use a rope Waterborne disease: do not drink water / wash hands after being in river / wear gloves / drink bottled water 3 @ 1	**3**
1(c)	Photo C, A, B 3 correct = 2 marks, 1 or 2 correct = 1 mark	**2**
1(d)(i)	Average depth multiplied by width	**1**
1(d)(ii)	Plotting bar for site 3 = 0.51 sq m	**1**
1(d)(iii)	**Partially** – 1 mark reserve Sites below waterfall / 7–12 / downstream **generally** or overall or majority or most or some have a bigger cross section area There are **exceptions** / anomalies at sites 2 / 5 / 7 / 9 / 12 (any e.g.) e.g. site 7 is smaller cross section and there are larger ones upstream e.g. site 12 is smaller cross section than site 11 Credit 2 marks maximum for data – any 2 sites and cross-section areas (1 mark for supporting hypothesis and 1 mark for exception) Sites must relate to a context above e.g. Site 1 = 0.12 sq m and site 12 = 0.84 sq m (support) e.g. Site 5 = 1.65 sq m and site 7 = 0.23 sq m (exception) e.g. average 1–6 (above) = 0.8 / 0.81 sq m and average 7–12 (below) = 1.94 sq m If no hypothesis conclusion credit evidence	**4**
1(e)(i)	Plotting score for site 10 = 1.53	**1**
1(e)(ii)	Hypothesis is **true** – 1 mark reserve (Average) score is higher / increases downstream (of waterfall) Credit 1 mark for paired data – average or sites above and below waterfall or range – which support hypothesis e.g. Sites 1–6 average = 1.11 and sites 7–12 average = 1.35 Site 1 = 1.19 and site 12 = 1.37 Range of sites 1–6 = 1.01 to 1.19 and range of sites 7–12 = 1.14 to 1.63 If no hypothesis conclusion credit evidence	**3**

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Question	Answer	Marks
1(f)(i)	Erosion on outside of meander / bank / side Lateral / sideways erosion	**1**
1(f)(ii)	Plot width at site 8 = 8.4 m	**1**
1(f)(iii)	Credit evidence from upstream and downstream of waterfall such as Second largest measurement at site 3 / upstream of waterfall Sites 2 / 3 / 5 are wider than some sites downstream Site 7 / 8 / 9 / 10 are narrower than some sites upstream Credit any two appropriate sites (upstream and downstream of waterfall) – either statement or statistics to 2 marks e.g. site 3 is wider than site 7 OR site 3 = 24.7 m and site 7 = 4.2 m e.g. site 2 is wider than site 10 OR Site 2 = 18.2 m and site 10 = 10.3 m 2 @ 1	**2**

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Question	Answer	Marks
1(g)	Method to measure stream velocity or gradient or load characteristics or wetted perimeter or pollution **Velocity using floats** Use tape measure to measure a fixed distance / 10 metres Put poles/sticks at fixed distance / 10 metres along river / at start and end of fixed distance Put float / orange in river at start of measured distance Start stopwatch or timer when float / orange is put in river Stopwatch or timer measures time it takes to travel the measured distance / stop stopwatch or timer when float reaches end of measured distance Measure at different points across river channel **Velocity using flowmeter** Put velocity meter / propeller / flowmeter below surface of river / into the water Propeller must be facing upstream / nothing in front of propeller Read / look at digital reading or display / speed is shown on display Take readings across river channel **Gradient** Measure 10 m distance along river Put two poles vertically on river bed Hold / put poles at either end of measured distance Hold clinometer next to top / at agreed height on pole Line up identified position / top of two poles Use clinometer to measure angle / degrees **Load – size, material or roundness** Select rocks at different sites downstream Sample a number / 10–20 rocks at each site Systematic or random sampling technique Put rock into callipers or pebbleometer / adjusted callipers to hold rock Measure length using scale on callipers Measured long axis / length with ruler Compare selected rock with Powers roundness scale Classify rocks according to roundness scale If characteristic does not match the method, credit method to 2 marks maximum If more than one method, credit best answer	**4**
1(h)	(Layers of) hard and soft rock / hard rock (layer) on top of soft rock (layer) Soft rock (layer) is eroded by river / river erodes at base of waterfall Abrasion / corrasion Hard rock (layer) is undercut / forms overhang / nothing to hold it / unsupported Hard rock (layer) collapses	**4**

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Question	Answer	Marks
2(a)	Plotting O5 at 4.5 km SW from town centre Plotting R3 at 3.8 km ENE from town centre 2 @ 1	**2**
2(b)(i)	Traffic moving freely (with few parked vehicles) Traffic moving slowly (with many parked vehicles) Traffic not moving (with many parked vehicles)	**1**
2(b)(ii)	Tells students what they are looking for at each site / gives a **description** to choose from / categories / specific description Gives standardised / range of **scores** for different situations / scores are specific Decision is less **subjective** / scoring is more objective / unbiased	**2**
2(b)(iii)	Example of conditions which might vary during the day, i.e. **noise / litter / traffic** Creates **time** as a variable	**1**
2(b)(iv)	Watch out for **traffic** / keep away from road / be careful crossing road / stay on pavement Stay in your **group** / do not go off by yourself Take a **mobile phone** Wear appropriate **clothing** / high visibility jacket / sunblock, etc. **Do not** talk to strangers / take valuables with you / go into dangerous areas / pick up sharp objects, etc. 2 @ 1	**2**
2(c)(i)	Results sheet to include: At least 3 categories Scoring system (3 2 1 0) / score out of 3 / score Total score / EQ score	**3**
2(c)(ii)	Plotting site R1 = 8 (x) Plotting average industry score = 10.6 (---) 2 @ 1	**2**
2(c)(iii)	**Agree** with conclusion / Yes / conclusion is correct – 1 mark reserve (✓HA) There is variation in (mean) scores / values / figures Compare any 2 types of land use – shops, residential, open space, industry e.g. Highest score is for shops and lowest score is for industry OR e.g. Shops score is higher than industry score Credit 1 mark(s) for supporting paired data e.g. (Average) score for shops = 16.2 and for industry = 10.6 Disagree with conclusion / conclusion is incorrect= 0 (XHA) If no hypothesis conclusion ^HA and credit evidence	**4**

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Question	Answer	Marks
2(c)(iv)	Depends on type / age of industry / different industries / examples of two different industries Some industrial areas are more built-up / more concentrated number of buildings / less open space Some industries are noisier Some industries cause more atmospheric pollution / smell Some industries have no waste treatment / recycling Variation in type / amount of transport / traffic to industry Amount of landscaping in industrial sites vary Need reference to variation or comparison between industries	**3**
2(d)(i)	Plotting score for site S5: 1.7 km distance and 15 EQ score	**1**
2(d)(ii)	No pattern / random / no relationship / no correlation / no trend / scattered / all over Same score at different distances from town centre Credit 1 mark for paired data which shows that hypothesis is **false** – need environmental scores and distances from centre e.g. EQ score = 20 at 0.2 km (S1) and EQ score = 6 at 4.0 km (O3) e.g. EQ score is 10 at 2.6 km and 5.3 km	**3**
2(e)	Repair **roads** / pavements **Landscaping** / plants trees / cut grass Example of ways to **reduce number of vehicles** or vehicles parking on road – yellow lines / parking meters / more public transport / pedestrianisation / congestion charge, etc. **Laws** / regulations on noise / atmospheric pollution / fines for companies polluting the air **Litter** bins / / recycling facility / fines for dropping litter / fines for graffiti Teams of people to **tidy up** area / remove graffiti Repair broken **street furniture** or e.g. 2 @ 1	**2**
2(f)	Produce a questionnaire / ask questions Example of appropriate question e.g. Do you think this area / site is noisy? / introduction or explanation about questionnaire Name of sampling method (to use questionnaire) Description of sampling method Number of people to sample (20–100) Do fieldwork at different times of day / decide which time to do fieldwork Decide on who does which task within the group OR interview methodology No credit for environmental quality scores	**4**

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