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Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

GEOGRAPHY **0460/43**

Paper 4 Alternative to Coursework **May/June 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.

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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)	To get comparable reading / for comparison / measurement is for 24 hours / consistent / not influenced by time of day / removes a variable	**1**
1(b)(i)	Gauge stood in ground (**not** on ground surface) / below ground level / underground Funnel catches rain / rain is collected in bottle Water poured (from bottle) into measuring cylinder Read water level in measuring cylinder / use the scale / measure the value in mm Empty water from measuring cylinder to set up for next day	**4**
1(b)(ii)	Away from trees to reduce interception by leaves Remote from people or animals which may interfere with the rain gauge 2 @ 1	**2**
1(c)(i)	Arrow rotates to point to the direction the wind **is coming from** N, E, S, W / compass points allow direction to be worked out	**2**
1(c)(ii)	On the roof / top of a building / top of a hill Wind is unobstructed/ gets full force of wind / prevent wind being blocked / no obstacle to block wind / no trees to shelter wind vane	**2**
1(d)(i)	Drawing two bars: 4th = 7 mm 27th = 4.4 mm 2 @ 1	**2**
1(d)(ii)	Hypothesis is **true** – 1 mark reserve Highest / higher / high rainfall totals when wind is blowing from south / south-east (accept wind in south / southerly wind / south wind / wind blows south, etc.) Lower / low rainfall totals when wind is blowing from other directions / named direction Note: higher rainfall when wind from the south than from the north = 2 marks 1 mark for data e.g. 29 / 30 mm when wind from south & 1 mm when wind from north Over 5 mm when winds from S / SE & less than 5 mm when winds from NW Data mark must compare S or SE with another direction (except NE)	**4**
1(d)(iii)	Winds in current year (Fig. 1.3) are from south / south west **and** from north / west / north west / north east in previous year (fig. 1.4) OR More days when wind is from the south / south west in current year OR More days when wind is from north in previous year (accept wind in south / southerly wind / south wind / wind blows south, etc.) 1 mark for paired data e.g. In current year 11 days from south and in previous year 5 days from south 2 @ 1	**2**

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Question	Answer	Marks
1(d)(iv)	Less / lower amount of rainfall in previous year OR More rain in current year OR Rain increases (from previous to current year)	**1**
1(e)(i)	Barometer	**1**
1(e)(ii)	Plotting two points on scatter graph: 987 mb & 10.0 mm 997 mb & 3.1 mm 2 @ 1	**2**
1(e)(iii)	Rainfall totals are lower when AP is higher / rainfall totals are higher when AP is lower / inverse relationship / negative relationship / weak relationship 1 mark for paired data e.g. AP = 976 rainfall = 23.5 mm & AP = 1012 rainfall = 3.5 mm AP = 980 rainfall = 29 mm & AP = 1003 rainfall = 0 mm	**2**
1(e)(iv)	AP is higher in previous year / greater range in AP in previous year / AP decreased from previous year to current year 1 mark for paired data e.g. 20 days under 1000 mb in current year and 1 day under 1000 mb in previous year OR 8 days over 1000 mb in current year and 27 days over 1000 mb in previous year OR Highest AP is 1012 in current year and 1040 in previous year OR Atmospheric pressure varies from 976 to 1012 in current year and from 997 to 1040 in previous year OR Difference / range of AP = 36 mb in current year & 43 in previous year	**2**
1(f)	Temperature highest when wind from south OR Temperatures higher / high when wind from south / south east / south west / west Temperatures lower / low when wind from north / north west / east (accept wind in south / southerly wind / south wind / wind blows south, etc.) Note: Temperature is higher when wind from south than when winds are from north = 2 marks 1 mark for paired data comparing wind directions and temperature, e.g., Temperature above 5^{o} when wind from south and below 5^{o} when wind from north Temperature is 9.2^{o} when wind from S & is 3.5^{o} when wind from north	**3**

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Question	Answer	Marks
2(a)	City / suburbs spread out / expand / grow Affects / changes surrounding or rural area / into rural area / into outskirts / takes over villages	**2**
2(b)	Digital pH meter gives a precise / accurate / specific reading / exact number Measuring clarity is by eye / more prone to discrepancy or human error / subjective / approximate / difficult to judge	**2**
2(c)(i)	Plot 5.8 at site 2 on Fig. 2.2	**1**
2(c)(ii)	Plot 35.0 at site 2 on Fig. 2.3	**1**
2(c)(iii)	Hypothesis is **false** – 1 mark reserve Less polluted / higher pH value / less acidic in site1 / site which has been built longest OR More polluted / lower pH value / more acidic in site 2 or 3 / site which is newer Clearer water / greatest depth of clear water in site 1 / site which has been built longest OR Less clear water / less depth of clear water in site 2 or 3 / site which is newer 1 mark maximum for paired data to compare sites e.g. (Average) pH = 6.1 at site 1 & 5.5 at site 3 (Average) depth of clear water = 38.3 cm at site 1 & 16.7 cm at site 3 Data must compare site 1 with either site 2 or site 3	**4**
2(c)(iv)	Older housing (site 1) has more efficient sewage disposal / lake is cleaned Vehicle pollutants (site 2) washed / fall into lake Building construction (site 3) results in dirty water / building waste entering lake	**2**
2(d)(i)	Scores are subjective / personal opinion Students live in different types of area / students from different backgrounds Looking at different parts of the site / different buildings to make judgement No pilot study to gain consistency 2 @ 1	**2**

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Question	Answer	Marks
2(d)(ii)	Suggestion: **Work** together / in pairs / individually and compare or average results Reason: Other students check scores /agree scores / discuss what score to give / makes results less subjective / biased / consistent Suggestion: One person in group scores the same feature in each area Reason: More consistent results Suggestion: Do surveys on same day / at same time / under same conditions Reason: Comparisons between areas are more consistent Suggestion: Spread students out / all over the site Reason: Record quality in all parts of the site Suggestion: Decide which buildings to look at Reason: Comparing the same thing 2 @ 2	**4**
2(d)(iii)	Plot general features results at site 2 on Fig. 2.6 Roads / pavements = 0 Road signs = –2 Lakes / streams = –1 Insects / wildlife = –1 4 correct = 2 marks 2 or 3 correct = 1 mark 1 correct = 0 (this would credit an NR response)	**2**
2(d)(iv)	Vandalism / graffiti (credit either)	**1**
2(d)(v)	Difference = 11	**1**
2(d)(vi)	Hypothesis is **true** / **correct** – 1 mark reserve Site 1 has highest EQ score OR EQ scores are lower in sites 2 / 3 OR At site 1 all EQ scores are positive and at site 2 / 3 there are negative scores Credit 2 marks for paired data comparing site 1 & another site e.g. Total EQ score = 27 for site 1 & –12 for site 3 / –7 for site 2 Buildings = 8 at site 1 & 5 at site 2 / 4 at site 3 Traffic = 4 × +2 at site 1 & 4 × –2 at site 2	**4**

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Question	Answer	Marks
2(e)	Vegetation has not been cleared / lot of vegetation Plenty of litter bins / notices to take litter home Little / no traffic in the area / roads are not busy / no roads Few people in the area / no one lives there / no human activity No pollution of lakes / streams Insects / wildlife are not disturbed / habitats are undisturbed No houses / offices / shops No credit for reference to buildings No credit for copying positive descriptions from Fig. 2.7	**4**

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