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 will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2017 series for most Cambridge IGCSE®, Cambridge International A and AS Level and Cambridge Pre-U components, and some Cambridge O Level components.
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<th>Question</th>
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| 1(a)(i)  | A: source  
B: confluence | 2     |
| 1(b)     | Agree methodology on what measurements to take  
Find out what doesn’t work / change it / avoid mistakes  
Practise fieldwork techniques / learn how to do  
Test / learn how to use equipment  
Experience of working as a team / team organisation  
Find out how long to allocate each task | 2     |
| 1(c)     | Width of channel:  
Stretch tape measure across river / from bank to bank / side to side  
Keep tape measure taut / horizontal / stretched / tight  
Measure perpendicular / at right angles to banks / straight across / directly opposite  
Measure where tape touches the bank  
Depth of river:  
Rest ruler on river bed / bottom  
Measure vertically / perpendicular to surface  
Measure where water level is / wet part of ruler  
Measure at equal points / 25–30 cm across channel | 4     |
| 1(d)(i)  | Completion of cross section and shading  
0.5 m at 2.9 m, 0.35 m at 4.2 m  
1 mark for each plot and no credit for shading | 2     |
| 1(d)(ii) | Site 4 | 1     |
| 1(d)(iii)| Hypothesis is true / partially true / mainly true / except for – 1 mark reserve (√ HA)  
If true – no credit for anomaly  
If partially true – reserve 1 mark for anomaly  
Two marks for supporting data – need 2 site numbers and 2 measurements  
Wider: 1.2 m at site 1 to 12.4 m at site 5 / increases by 11.2 m (credit any 2 sites)  
Deeper: 0.2 m at site 1 to 0.6 m at site 5 / increases by 0.4 m (credit any 2 sites)  
Anomaly between sites 4 and 5 – depth is 0.9 m at site 4 and 0.6 m at site 5 | 3     |
| 1(e)(i)  | Classification is subjective / based on student judgement  
Classes of pebbles are very similar / hard to distinguish between classes | 1     |
| 1(e)(ii) | Pebbles selected may not be typical of the pebbles at that site / bigger than other pebbles / smaller than other pebbles / anomalies / not representative  
All pebbles may have been taken from same area of river bed / not across river channel / areas missed out  
Not a fair / reliable sample / bias / student preference | 2     |
| 1(e)(iii)| Completion of divided bar graph for site 2:  
Very angular = 9, angular = 4, slightly angular = 6, slightly rounded = 1  
2 marks for dividing lines, 1 mark for shading | 3     |
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<tr>
<td>1(e)(iv)</td>
<td>Slightly angular = 12, slightly rounded = 24, rounded = 14, very rounded = 2 (Do not need 0 in very angular and angular)</td>
<td>1</td>
</tr>
<tr>
<td>1(e)(v)</td>
<td><strong>Total score</strong> decreases from sites 1 / 2 to sites 4 / 5 Sites 2 / 5 are anomalies – higher score than previous site Very angular pebbles only found at sites 1 and 2 / not found at sites 3, 4 and 5 Rounded / very rounded pebbles only found at sites 3, 4 and 5 / not found at sites 1 and 2 Credit 2 marks max (not reserve) for paired data based on total scores, e.g. Site 1 = 94 and site 5 = 63 to agree with conclusion Site 1 = 94 and site 2 = 101 to explain partly true / anomaly</td>
<td>3</td>
</tr>
<tr>
<td>1(e)(vi)</td>
<td>Erosion / pebbles crash into each other / pebbles crash into bed or banks / collide with each other Attrition Longer duration of transport / longer time to be eroded / been in river longer / water smooths pebbles as they go downstream</td>
<td>2</td>
</tr>
<tr>
<td>1(e)(ii)</td>
<td>Completion of isoline Line must go between sites 3 and 8 and join up with existing isoline</td>
<td>2</td>
</tr>
<tr>
<td>1(f)(i)</td>
<td>Callipers</td>
<td>1</td>
</tr>
<tr>
<td>1(f)(ii)</td>
<td>Measure long axis / length of pebble Repeat size measurements to check accuracy / another student checks measuring Sample / measure several / 2–20 pebbles at each site and calculate average of measurements Use same sites 1–5 / sites downstream / select new sites / sites equal distance apart Use systematic sampling / pick pebbles across width of river No reserve mark for method or reliability</td>
<td>3</td>
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<td></td>
<td><strong>Total:</strong></td>
<td>30</td>
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<td>Question</td>
<td>Answer</td>
<td>Marks</td>
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| 2(a)(i)      | Questionnaire is for tourists / only wanted to ask tourists / to see if they are tourists  
Not waste people’s time / if not a tourist no need to continue  
If include non-tourists results will be unreliable / contain wrong information / inaccurate / irrelevant  
Some people they ask will not be tourists / eliminate residents | 2     |
| 2(a)(ii)     | Systematic                                                                                                                                                                                            | 1     |
| 2(a)(iii)    | Easy / quick method to undertake / don’t need random numbers / don’t need knowledge of population to be sampled  
Will not be biased / will be reliable / will be fair | 2     |
| 2(b)(i)      | Plot China = 16 and USA = 10 on Fig. 6  
Must point in direction of Bagan | 2     |
| 2(b)(ii)     | Map:  
Shows direction of movement  
Shows which area of world / where tourists come from / location  
Shows distance / how far tourists travel  
Bar graphs:  
Easy to see number / how many / exact figure  
Easy to rank / see the order of importance / analyse  
Easy to compare different countries / values  
Separates Asian and non-Asian countries | 2     |
| 2(b)(iii)    | Hypothesis is true – 1 mark reserve  
64(%) come from Asia / 28 more from Asia  
Two largest source countries are in Asia / Thailand and China / most come from Thailand and China  
Credit 1 mark (not reserve) for accurate data to compare two bar graphs, e.g.  
16 come from China / Thailand and 10 come from USA  
16 come from Thailand and less than 10 from all countries outside Asia  
In Asia highest number is 16 and outside Asia highest number is 10 | 3     |
| 2(c)(i)      | Plotting over 60 categories on histogram:  
Cultural and heritage = 19  
People and traditions = 7  
–1 mark if incorrect or no shading | 2     |
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| 2(c)(ii) | Hypothesis is **false / no / not supported** – 1 mark reserve (✓ HA)  
People in different age groups visit for the same reasons  
(Main) attraction for people of all age groups is cultural and heritage sites  
(Second) attraction for all age groups is people and their traditions  
Other reasons / balloon rides / hot weather / restaurants and nightlife are unimportant for all age groups  
Credit 1 mark max for supporting statistics from at least two age groups e.g.  
15 from 21–40 and 19 from over 60 visit cultural and heritage sites  
1 from 0–20, 1 from 21–40, 0 from over 40 visit restaurants | 4 |
| 2(d)(i) | Complete pie graph for Thailand  
Plot ‘people’ = 19% and ‘travel agent’ = 37%  
1 mark for dividing line, 1 mark for shading | 2 |
| 2(d)(ii) | **More** people used travel agent in China  
**More** people used internet in Japan  
Most use travel agent in China and most use internet in Japan  
Credit ‘only’ with statistics | 2 |
| 2(e)(i) | Advantages (to 3 marks maximum)  
Brings money into the area / economy / increase GDP / sell to tourists / tourists buy products  
Creates jobs for local people / e.g. of job  
Local people experience cultures from other countries / share culture / local traditions across the world / preserves local culture  
Improves local services / public transport / health / education  
Locals can use tourist facilities / services  
Multiplier effect  
Disadvantages (to 3 marks maximum)  
Disturbance to local people / noise  
Traffic congestion  
Tourists don’t respect local culture / alcohol / drugs / religious issues / racial tension / prostitution  
Tourist hotels / development take up farmland / knock down houses  
Hotels spoil the view  
Tourist industry uses scarce resources / water / electricity  
Air pollution / water pollution / waste / litter from tourist developments  
Seasonal jobs  
Increased price of goods / property  
Loss of privacy  
Reserve 2 marks for advantages / disadvantages | 5 |
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<tr>
<td>2(e)(ii)</td>
<td>1 mark for topic being investigated e.g.</td>
<td></td>
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<td></td>
<td>Water pollution</td>
<td></td>
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<td></td>
<td>Litter</td>
<td></td>
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<td></td>
<td>Decrease in vegetation</td>
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<td></td>
<td>1 mark for how it is being investigated e.g.</td>
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<td></td>
<td>Bi-polar analysis</td>
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<td>Quadrat</td>
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<td></td>
<td>Litter count</td>
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<td></td>
<td>Species identification</td>
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<tr>
<td></td>
<td>Comparing photographs</td>
<td></td>
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<td></td>
<td>Environmental index</td>
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<td></td>
<td>1 mark for development of method with clear focus on natural environment e.g.</td>
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<tr>
<td></td>
<td>Generic ideas about grouping, time of day, checking methodology</td>
<td></td>
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<tr>
<td></td>
<td>Specific details of method</td>
<td></td>
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<td></td>
<td>Total:</td>
<td>30</td>
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