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 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.

This document consists of **6** printed pages.

Question	Answer	Marks
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**

Question	Answer	Marks
1(e)(iv)	Slightly angular = 12, slightly rounded = 24, rounded = 14, very rounded = 2 (Do not need 0 in very angular and angular)	1
1(e)(v)	**Total score** 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	3
1(e)(vi)	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	2
1(e)(ii)	Completion of isoline Line must go between sites 3 and 8 and join up with existing isoline	2
1(f)(i)	Callipers	1
1(f)(ii)	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	3
	Total:	**30**

Question	Answer	Marks
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 Gives information about distribution / pattern of countries 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**

Question	Answer	Marks
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**

Question	Answer	Marks
2(e)(ii)	1 mark for topic being investigated e.g. Water pollution Litter Decrease in vegetation 1 mark for how it is being investigated e.g. Bi-polar analysis Quadrat Litter count Species identification Comparing photographs Environmental index 1 mark for development of method with clear focus on natural environment e.g. Generic ideas about grouping, time of day, checking methodology Specific details of method	**3**
	Total:	**30**