



**Cambridge Assessment International Education**  
Cambridge International General Certificate of Secondary Education

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**GEOGRAPHY**

**0460/42**

Paper 4 Alternative to Coursework

**October/November 2017**

MARK SCHEME

Maximum Mark: 60

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**Published**

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

Question	Answer	Marks
1(a)	Rope	1
1(b)(i)	Tube / measuring tube pushed/knocked/placed/inserted <u>into</u> soil/ground (1) Fixed/measured/some water in container (1) Pour amount/120 mm into measuring tube (1) Measure height of water in tube every minute (1) Use a stopwatch/timer (1)  (1+1+1) = 3	3
1(b)(ii)	Plot minutes 8/55, 9/53 and 10/50 for site 4 on Fig. 3. 1 or 2 correct = 1; 3 correct = 2.  (1 + 1) = 2	2
1(b)(iii)	$\frac{24}{10}$ or $\frac{120 - 96}{10}$ Allow 24 above dotted line and 10 underneath it.	1
1(b)(iv)	Plot infiltration rate of 2.4 at site 7/140 m.	1
1(b)(v)	1 mark reserve for correct hypothesis decision (1)  <u>Evidence</u> Infiltration rate decreases <u>at each site</u> further away from the river (1)  Credit paired data for site/distance and infiltration rate of two sites e.g. At Site 1/20 m from river rate is 15 mm per min but at Site 7/140 metres from river to 2.4 mm per min. (1 MAX)  (1HA + 1 + 1) = 3	3
1(c)(i)	<u>Negative relationship</u> between distance from the river and infiltration rate along Transect A/ Fig 4 OR constant/regular/certain trend (1)  <u>No relationship</u> /pattern/trend between distance from the river and infiltration rate along Transect B/ Fig 5 OR the relationship is random/fluctuates/scattered/not constant/irregular (1) Allow 1 max if use opposite e.g. constant/not constant; scattered/not scattered..  (1 + 1) = 2	2

Question	Answer	Marks
1(c)(ii)	<p><u>Examples:</u> Need to compare two Transects land-uses.</p> <p>On transect A steeper slope/slope increases away from river but on transect B gentler slope (1) Infiltration rate decreases on Transect A as slope becomes steeper (1)</p> <p>On transect A soil changes from sand to clay away from river but on transect B soil does not change/mixed sand and clay (1) Infiltration rate is quicker on sandy soil in Transect A (1)</p> <p>On transect A the ground is cleared / bare ground away from river but on transect B grass/trees don't change (1) OR more vegetation in B (1) Infiltration rate is quicker on Transect B in area with vegetation away from the river (1)</p> <p style="text-align: right;">(1 + 1 + 1 + 1) = 4</p>	<b>4</b>
1(d)(i)	<p><u>Examples:</u> Credit advantages of method 2. No need for comparison.</p> <p>Quick/easy/simple method/easy to do/easy to use/easy to read (1) No need to do calculation/gives instant/direct result/does not need formula (1) Less student error/exact/precise/accurate/reliable (1) Several readings can be taken at once and an average worked out (1) Portable/can be used on site/small amount of equipment (1) Can measure equal/10 cm/even depths (1)</p> <p style="text-align: right;">(1 + 1 + 1) = 3</p>	<b>3</b>
1(d)(ii)	<p>Plot soil moisture content (4.3%) and infiltration rate (13.2) at site 3. (Credit IR plot on the line; not close to it.)</p> <p style="text-align: right;">(1 + 1) = 2</p>	<b>2</b>
1(d)(iii)	<p><u>Group A on Transect A</u> – 1 mark reserve (1)</p> <p><u>Evidence all from Transect A</u> Transect A – infiltration rate decreases as soil moisture content increases from site 1 to site 7 / at all sites /each point /every point as you move away from the river (1)</p> <p>Credit paired data from 2 sites e.g. at Site 1/at start rate is 15 mm per min and 1.6% and at Site 7/finish to 2.4 mm per min but soil moisture content to 8.8% (1)</p> <p style="text-align: right;">(1HA + 1 + 1) = 3</p>	<b>3</b>
1(e)	<p>How: infiltration rate would be lower /decrease/ slower (1) Why: soil is saturated/soil moisture content is higher (1)</p> <p style="text-align: right;">(1 + 1) = 2</p>	<b>2</b>

Question	Answer	Marks
1(f)	<p><u>Examples</u></p> <p>People compress/compact the ground/ground hardens/denser (1)  Water cannot soak into the ground as quickly/less gaps in soil (1)  Lowers infiltration rate/slow down infiltration/harder to infiltrate (1)  Impermeable footpaths may be built for tourists reducing infiltration (1)</p> <p style="text-align: right;">(1 + 1 + 1) = 3</p>	<b>3</b>

Question	Answer	Marks
2(a)(i)	<p>Used a bi-polar analysis (1)  Write name of area on sheet (1)  Observe/look at/see features (1)  Make a decision about/rate/judge/give a score (1)  Put a tick/fill in the appropriate column/record on sheet (1)</p> <p style="text-align: right;">(1 + 1) = 2</p>	<b>2</b>
2(a)(ii)	<p>Decide whether to survey individually or in a group /pairs (1)  Agree where each group goes/decide which sites to go to (1)  Agree on what descriptions mean/do a pilot or practice survey (1)  Decide when would be best day/part of day to do survey/do it same day (1)  Agree on time of survey/all surveys done at same time (1)  Decide whether to calculate an average score from several students results/one student decides on the group's scores (1)  Decide whether to repeat on different times/days (1)</p> <p style="text-align: right;">(1 + 1 + 1 + 1) = 4</p>	<b>4</b>

Question	Answer	Marks
2(b)(i)	<p>Credit what the scores mean in terms of quality of the urban environment as in the question. <u>Better/worse/poorer</u> only accepted in <u>certain features</u> – see below.</p> <p><b>Tettenhall and Pendeford:</b> <u>Examples: (1 MAX)</u> More open land in T/less open land in P (1) More attractive land in T/less attractive land in P (1) Less vandalism and damage in T/more or worse vandalism in P (1) More attractive <u>overall</u> in T than P (1)</p> <p><b>Whitmore Reans and Low Hill:</b> <u>Examples: (1 MAX)</u> Less maintained/poorer/worse building condition in W/more maintained or better building condition in L (1) Less open land in W/more open land in L (1) Less attractive land in W/more attractive land in L (1) More/worse vandalism in W/less vandalism in L (1) More/worse noise OR air pollution/noisier in W/less noise OR air pollution in L (1) Less maintained/poorer/worse roads and pavements in W / more maintained or better roads and pavements in L (1) Less attractive <u>overall</u> in W than L (1)</p> <p style="text-align: right;">(1 + 1) = 2</p>	<b>2</b>
2(b)(ii)	<p>Completion of bi-polar graph; need both plots and joined accurately for the mark. Noise and air pollution (–1) and roads and pavements (+1).</p>	<b>1</b>
2(b)(iii)	<p>Plotting bar for Whitmore Reans (–5) on Fig. 11.</p>	<b>1</b>
2(b)(iv)	<p>Hypothesis is <b>PARTLY TRUE</b> – 1 mark reserve for correct decision. (1)</p> <p><u>Evidence</u></p> <p>Minus/negative or low scores nearer to centre/positive or high away from centre (1) e.g. Any two sites that agree: Heath Town close with score of –2 and Pendeford further away with higher score of 10 (1)</p> <p><u>NOTE: 1 Reserve/max mark for anomaly statement or stats.</u> Anomaly of Tettenhall – higher score nearer centre than areas further from centre (1) e.g. Tettenhall close with 12 and Fordhouses further away with lower score of 7 (1). (Could also use Low Hill 3 or Pendeford 10)</p> <p style="text-align: right;">(1HA + 1 + 1 + 1R) = 4</p>	<b>4</b>



Question	Answer	Marks
2(f)	<p><u>Examples</u></p> <p>Decide on groups/pairs or individual research (1)            Divide jobs between students/1 counts other records (1)            Decide on appropriate sites/roads (1)            Decide when to do the traffic counts/time (1)            Decide which days to do it (1)            Decide duration of traffic counts (1)            Go to 2 sites on each road/opposite sides of road/specific sites (1)            Use stopwatch/watch for timing (1)            Count <u>traffic/vehicles/types of vehicles/all transport types</u> (1)            Use counter/clicker/tally method (1)            Synchronise timing/start and finish at same time (1)            Record on sheet/table/chart (1)</p> <p style="text-align: right;">(1 + 1 + 1 + 1) = 4</p>	<b>4</b>