



GEOGRAPHY

0460/42

Paper 4 Alternative to Coursework

October/November 2017

MARK SCHEME

Maximum Mark: 60

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>	4
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>	3
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>	2
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>	3
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>	2

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/slows 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>	3

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>	2
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>	4

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>Tettenhall and Pendeford: <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>Whitmore Reans and Low Hill: <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>	2
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>	1
2(b)(iii)	<p>Plotting bar for Whitmore Reans (–5) on Fig. 11.</p>	1
2(b)(iv)	<p>Hypothesis is PARTLY TRUE – 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>	4

Question	Answer	Marks
2(c)	<p>Description: Use random number generator to decide who they ask/ask next person they meet/put numbers in a bag and draw out to decide who they ask. (1 MAX).</p> <p>Advantage: random numbers avoids bias/equal chance of being selected/reliable/quicker (1 MAX)</p> <p style="text-align: right;">(1 + 1) = 2</p>	2
2(d)(i)	<p>Completion of Fig. 12.</p> <p>Park: between 5 and 15 (7 minutes) Secondary school: more than 30 (40 minutes)</p> <p style="text-align: right;">(1 + 1) = 2</p>	2
2(d)(ii)	<p><u>Examples:</u></p> <p>People may not walk / may go by car / bus / mobility scooter / other transport (1) People may not go to the nearest service / more than one service to go to (1) People walk at different speeds / people walk faster on one day than another (1) People walk by different routes (1) Estimated times may be inaccurate / vague / people don't know / guess (1) Take them longer when it's busy (1) Don't use specific services (1)</p> <p style="text-align: right;">(1 + 1) = 2</p>	2
2(d)(iii)	<p>Local store = 4 (1) Total = 24 (1) Award total mark if local store is wrong but <u>total correct</u> to avoid ECF. (Likely to be combinations of NR/20; 0/20; 1/21; 2/22; 3/23 – give X = 0 for 1st incorrect figure but TICK = 1 if total is right using the incorrect figure)</p> <p style="text-align: right;">(1 + 1) = 2</p>	2
2(e)(i)	<p>Completion of pie graph for Fordhouses (45%) or 162° clockwise. Allow tolerance of 1% each way i.e. 158–166°. <u>Plot and shading must be correct</u> for the mark.</p>	1
2(e)(ii)	<p>Hypothesis is FALSE – 1 mark reserve for correct decision. (1)</p> <p><u>Evidence:</u> Highest scores increase towards city centre OR access near centre is better <u>nearer</u> to centre (1) e.g. Heath Town near with 91 and Pendeford further/far away with 51 (1) (Any two examples that work).</p> <p style="text-align: right;">(1HA + 1 + 1) = 3</p>	3

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>	4