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**GEOGRAPHY**

**2217/22**

Paper 2 Investigation and Skills

**May/June 2017**

MARK SCHEME

Maximum Mark: 90

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**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.

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**Section A**

<b>Question</b>	<b>Answer</b>	<b>Marks</b>
1(a)	1079	<b>1</b>
1(b)(i)	Motorsport Centre Museum Prison A14 road / main road Drive / track Buildings / housing School Industrial Estate	<b>2</b>
1(b)(ii)	Non-coniferous wood Marsh / salting Nature reserve Lake / pond River	<b>3</b>
1(c)(i)	7	<b>1</b>
1(c)(ii)	From Q towards R	<b>1</b>
1(d)(i)	436/7 010/1	<b>1</b>
1(d)(ii)	East SE / SSE	<b>2</b>
1(e)	A is higher / ore mountainous / B is lower A is steeper / B is gentler A is up to 250 m <u>and</u> B is 10–20 m (anything in range for B) A is a hill / sloping <u>and</u> B is flat	<b>3</b>
1(f)	<u>Physical features</u> Beach Shingle / sand Sand dunes = 0 Slopes River mouths  <u>Human Features</u> Parking National Trail / long distance path / footpath / recreational route Nature reserve Picnic site	<b>6</b>

Question	Answer	Marks
2(a)	Bolivia completed with # Uruguay completed with //	2
2(b)(i)	French Guiana	1
2(c)(i)	14–6 / birth rate – death rate 8	2
2(c)(ii)	Emigration higher than immigration Average of 2.7 per 1000 population	2
2(c)(iii)	Emigration = immigration	1

Question	Answer	Marks
3(a)	River cliff Tributary Confluence	3
3(b)	West	1
3(c)	Steep Flatter land / by river could flood Lack of sunlight / shadowed aspect Poor soil fertility Lack of access / road is narrow / twisty Lack of labour / markets / low population density Lack of buildings for farmer / machinery Thin soils Soil erosion Bushes / trees would need clearing	4

Question	Answer	Marks
4(a)	Straddles tropic of Cancer / Capricorn / 30 °N / S Both north and south hemisphere West of continents Every continent except Europe (and Antarctica) / 5 continents named Largest area in Africa Named country	3
4(b)	Cold ocean current offshore High pressure Winds over land / trade winds	1
4(c)(i)	Correct graph completion	1
4(c)(ii)	17 °C	1

Question	Answer	Marks
4(c)iii)	Lowest temp at 0500 Highest temp at 1400  Rises after sunrise / as sun goes higher Falls as sun goes lower / towards sunset / overnight Temp peak after insolation peak due to radiation from ground  Reserve 1 for each of describe and explain	2

Question	Answer	Marks
5(a)	Bar at 13 mm Division of bar and shading below 7 mm	2
5(b)(i)	April	1
5(b)(ii)	March September	1
5(b)(iii)	1 mm 19 mm	2
5(c)(i)	B	1
5(c)(ii)	A / C is exposed to the sun / not reading the shade temperature A because you have to read it sideways A is exposed to rain C gets heat from the ground	1

Question	Answer	Marks
6(a)(i)	Completion of plots Completion of broken line	2
6(a)(ii)	\$18100 – \$18900	1
6(b)(i)	Libya	1
6(b)(ii)	Increase to 2008 Decrease 2008–2014 Sharper decrease 2011–2012	2
6(c)	UK is higher / South Korea is lower GDP per person <u>throughout</u> Same pattern of increase and decrease UK has sharper increase in 2006–2007 UK has sharper decrease in 2008–2009 South Korea has sharper increase 2009–2010 South Korea has sharper increase 2012–2013 UK has sharper increase 2013–2014 Both overall increase	2

**Section B**

Question	Answer	Marks
7(a)(i)	<p><u>Examples</u>            Onshore wind/wind from the sea (1)            Obstacle/plant/stone on the beach (1)            Wind picks up/blows/moves sand (1)            Sand moved by saltation (1)            Friction with obstacle/plant slows down wind (1)            Sand is deposited/collects around obstacle (1)            Vegetation/marram grass/ragwort grows (1)            More deposition so sand/dune grows (1)            Vegetation helps to stabilise dunes / helps dunes to grow (1)</p> <p style="text-align: right;">(4 × 1) = 4</p>	<b>4</b>
7(a)(ii)	<p><u>One mark max for each piece of equipment</u></p> <p><u>Tape measure</u>: measure/know a distance/10 metres (1)  <u>Ranging poles</u>: mark/show/identify the ends of the distance (1)  <u>String</u>: link ranging poles at <u>same height/at same points on poles</u> (1)  <u>Clinometer</u>: measure the angle/read off the angle/record angle/measure degrees (1)</p> <p style="text-align: right;">(4 × 1) = 4</p>	<b>4</b>
7(b)	<p><u>Pie graph completion</u>            Access only with permission = 13%, No access for visitors = 19%</p> <p>1 mark for dividing line at 81% clockwise (292 degrees or 68 degrees left of north); tolerance 65–70 degrees left of north using protractor tool. Do not credit line at 80%.</p> <p>1 mark for shading both slices in clockwise order of key and correct shading; can credit shading if both shaded correctly but in the wrong order due to line wrongly plotted – largest slice must be crosses; smaller horizontal lines.</p> <p style="text-align: right;">(1 + 1) = 2</p>	<b>2</b>
7(c)(i)	<p><u>Examples</u>            Put/place/drop/set quadrat (1)            Estimate percentage of quadrat/count number of squares or boxes which include vegetation cover (1)            Repeat and take an average (1)</p> <p><u>NOT</u>: throw/use a quadrat, measure the vegetation in the squares.</p> <p style="text-align: right;">(1 + 1 + 1) = 3</p>	<b>3</b>
7(c)(ii)	Draw bar to show 65% vegetation cover at 20 m.	<b>1</b>
7(c)(iii)	Plot 3 species at 20 m <u>and complete line</u> .	<b>1</b>

Question	Answer	Marks
7(c)(iv)	<p>Hypothesis is TRUE – 1 mark reserve</p> <p><u>Examples of evidence</u></p> <p><u>Vegetation cover (2 max for vegetation)</u>            Vegetation cover above 60% in no access/Fig 3A &amp; as low as 40% in open area/Fig3B (1)            Six percentage measurements of 80% or more in no access &amp; two of 80% or more in open area (1)            Higher average of 73.2% cover with no access but lower 55% in open area (1)            95% vegetation cover highest with no access than 85% highest in open area (1)</p> <p><u>Number of Species (2 max for species)</u>            Up to 6 different species in no access and 4 or less in open area (1)            Three measurements of 3 species or less in no access and 8 measurements of 3 or less in open area (1)            Higher average of 4.2 species in no access and lower of 2.3 in open area (1)</p> <p style="text-align: right;">(1HA + 1 + 1 + 1) = 4</p>	<b>4</b>
7(d)(i)	<p><u>Examples</u>            Different days (1)            Different times (1)            Uneven distances (1)            Not enough sites/distances too far apart (1)            Number of visitors at the three sites will vary (1)            Survey is being done by different groups (1)            Results of bi-polar survey may be subjective (1)</p> <p style="text-align: right;">(1 + 1) = 2</p>	<b>2</b>
7(d)(ii)	+1, + 1, –2, –1, +1 = 0. <u>Do not need + if the – are correct.</u>	<b>1</b>
7(d)(iii)	<p>Completion of bi-polar graph. Plots need to be located approx. similar location as in Site A and Site C. There are 5 plots plus a line to join them.</p> <p>1 mark for 5 correct plots; 1 mark for joining them with a line <span style="float: right;">(1 + 1) = 2</span></p>	<b>2</b>
7(d)(iv)	<p>Hypothesis is FALSE – 1 mark reserve</p> <p><u>Examples of evidence: stats must be overall scores not individual scores.</u>            Greatest effect is nearest to the beach/effect decreases away from the beach (1) <i>(Can credit if list all 5 factors as positive away from beach)</i>            Overall score is –7 nearest to beach and + 8 furthest from beach (1)</p> <p style="text-align: right;">(1HA + 1 + 1) = 3</p>	<b>3</b>

Question	Answer	Marks
7(e)	<p><u>Examples</u></p> <p>Educate tourists through notice boards /visitor centre/signs/posters/flyers (1)  Marked/signed/create more footpaths (1)  Boardwalk across area (1)  Fence off areas (1)  Barriers to prevent vehicle/cycle access (1)  Guides/rangers to monitor/advise tourists (1)  Designate picnic/BBQ sites (1)  Litter bins (1).</p> <p style="text-align: right;">(1 + 1 + 1) = 3</p>	<b>3</b>
	<b>Total:</b>	<b>30</b>

Question	Answer	Marks
8(a)(i)	1 or 2 in correct row = 1; 3 or 4 in correct row = 2. Allow credit if area not fully written out but is a correct choice  Africa South East + East Asia South West + Central Asia Central + South America <p style="text-align: right;">(1 + 1) = 2</p>	<b>2</b>
8(a)(ii)	<u>Completion of divided bar graph</u> Dishwasher = 28 (line at 100), washing machine = 102 (line at 202), washing = 6 (line at 208). Only credit first 2 lines.  2 marks for lines at 100 and 202; ignore 208 line if they add it. 1 mark for three shadings in correct order from the left using the key. (1 + 1 + 1)	<b>3</b>
8(a)(iii)	<u>Credit two separate comparative examples from the 4 main uses.</u> Accept reverse answers for less uses in village. Only accept comparative figures if use word “only” before lower one.  Delhi resident uses more water overall/village resident uses less water (1) Delhi more water flushing the toilet (1) Delhi more water having a shower (1) Delhi more water <u>using</u> the dishwasher (1) Delhi more water using the washing machine/washing clothes (1) <p style="text-align: right;">(1 + 1) = 2</p>	<b>2</b>
8(b)(i)	Any of the three methods below. Give description marks if do not name method but are describing correct method. Credit 1 mark <u>reserved</u> for naming the method and 2 marks for description.  <u>Stratified (1R)</u> Need to find out gender or age of residents (1) Ask a balanced number or proportionate number of residents of different age group and gender (1) <b>OR</b> Identify different types of houses/ask residents from different types of houses (1 max)  <u>Systematic (1R)</u> Choose residents/houses at regular intervals (1) Every tenth resident who passes them/every tenth house they pass (1)  <u>Random (1R)</u> Use random no. tables to generate order to ask resident/identify houses (1) Choose residents/houses which fit the sequence identified (1) <b>OR</b> Ask anybody/next resident/visit any house/no pattern (1 max) <p style="text-align: right;">(1R + 1 + 1) = 3</p>	<b>3</b>



Question	Answer	Marks
8(b)(ii)	<p><u>Examples</u>            Language difficulties/can't read/write/uneducated/don't understand (1)            People not cooperating/answering questions/privacy/lying/personal issues (1)            People not knowing precise answers to the questions/inaccurate answers (1)            If visiting houses people may be out/at work (1)</p> <p style="text-align: right;">(1 + 1) = 2</p>	<b>2</b>
8(c)(i)	<p>Plotting Bacharna on scatter graph: time = 22 hours, distance = 950 m  <u>Need accurate plot and name</u></p>	<b>1</b>
8(c)(ii)	<p><b><u>NOTE: Ignore any decision made by candidates; just mark evidence to support the researchers' decision. Two general points plus two marks reserved for data. If they use graph for data allow sensible tolerance ref. table figures</u></b></p> <p>Results from 4/most villages support positive hypothesis/2 villages do not support (1) (4 villages if named are Anganwa, Bacharna, Lolawas, Modijoshiyan)            Soorpora and Kalijal are anomalies/do not fit the pattern (1)</p> <p><u>Credit paired data to support positive hypothesis – distance and time for two villages e.g. Anganwa 120 metres distance and 14 hours' time and Bacharna 950 metres and 22 hours' time (1R). Can be any two of the four named supporting villages that show positive trend i.e. from Anganwa, Bacharna, Lolawas, Modijoshiyan.</u></p> <p><u>Credit data for either anomaly</u>            Distance at Soorpora is only 136 metres; spend 18 hours collecting it (1R) OR            Distance at Kalijal is 1460 metres but only spend 19 hours collecting it (1R)            (1 + 1 + 1R + 1R) = 4</p>	<b>4</b>
8(c)(iii)	<p>Plot data for Kalijal on scatter graph: time = 19 hours, water used = 215 litres  <u>Need accurate plot and name.</u></p>	<b>1</b>
8(c)(iv)	<p>Hypothesis is FALSE. 1 mark reserve</p> <p><u>Evidence</u>            No relationship/correlation is shown (1 Reserve)</p> <p>Credit either two general statements or one general statement plus correct stats for any of the following villages. Allow sensible tolerances for data if use graph rather than table.</p> <p>e.g. Bacharna has longest time but not the lowest uses (1) 22 hours and 286 litres (1)            Anganwa has shortest time but one of higher uses (1) 14 hours and 316 litres (1)            Modijoshiyan has most use but a middle/average time (1) 343 litres and 17 hours (1)            Khalijal has lowest use but one of highest times (1) 215 litres and 19 hours (1)</p> <p style="text-align: right;">(1HA + 1R + 1 + 1) = 4</p>	<b>4</b>

Question	Answer	Marks
8(d)(i)	Bacharna	1
8(d)(ii)	Lolawas	1
8(d)(iii)	<p><u>Examples</u>            More developed water infrastructure in Soorpura/less developed water infrastructure in Bacharna (1)            Soorpura is a richer village / more money to spend Bacharna poorer village (1)            Less rainfall in Soorpura/ more rainfall in Bacharna/ (1)            Lower water table in Soorpura so less wells (1)            River/water may be polluted in Soorpura/not polluted in Bacharna (1)            May be no river in Soorpura/near to river at Bacharna (1)</p> <p style="text-align: right;">(1 + 1 + 1) = 3</p>	3
8(d)(iv)	<p><u>Examples</u>            Water is polluted/dirty/contaminated/not clean/unsafe to consume (1)            Water may cause disease/bacteria/sickness/health problems (1)            Animals may pollute water (1)            Dries up/unreliable water supply/runs out of water/lack of rainfall (1)            Unable to store sufficient water/leaking stores/tanks (1)            Rainfall is seasonal/periodic/erratic (1)            Overuse by people/animals (1)</p> <p><u>NOT</u>: acid rain, crocodiles etc. in river, dehydration, water not purified, water is dangerous</p> <p style="text-align: right;">(1 + 1 + 1) = 3</p>	3
	<b>Total:</b>	<b>30</b>