
GEOGRAPHY

2217/22

Paper 2 Investigation and Skills

May/June 2018

MARK SCHEME

Maximum Mark: 90

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.

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Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

the specific content of the mark scheme or the generic level descriptors for the question
the specific skills defined in the mark scheme or in the generic level descriptors for the question
the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
marks are awarded when candidates clearly demonstrate what they know and can do
marks are not deducted for errors
marks are not deducted for omissions
answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Section A

Question	Answer	Marks																				
1(a)(i)	Church	1																				
1(a)(ii)	Mountain hut	1																				
1(a)(iii)	Observation tower	1																				
1(a)(iv)	317 <u>metres</u>	1																				
1(b)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 35%;"></td> <td style="width: 15%; text-align: center;">Jürgenohl</td> <td style="width: 15%; text-align: center;">Ohlhof</td> <td style="width: 15%; text-align: center;">Both</td> <td style="width: 15%; text-align: center;">Neither</td> </tr> <tr> <td>Dual carriageway</td> <td></td> <td></td> <td style="text-align: center;">✓</td> <td></td> </tr> <tr> <td>Parallel roads</td> <td style="text-align: center;">✓</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Railway</td> <td></td> <td></td> <td></td> <td style="text-align: center;">✓</td> </tr> </table>		Jürgenohl	Ohlhof	Both	Neither	Dual carriageway			✓		Parallel roads	✓				Railway				✓	3
	Jürgenohl	Ohlhof	Both	Neither																		
Dual carriageway			✓																			
Parallel roads	✓																					
Railway				✓																		
1(c)(i)	Flows to the north / NNE Turns to the north east Turns to the east	2																				
1(c)(ii)	Variable width / lake Meanders Tributaries Braided / splits and rejoins	3																				
1(d)(i)	027543 = 2 marks 027544 = 1 mark	2																				
1(d)(ii)	4200 – 4600	1																				
1(e)	Water storage / lakes / reservoirs Forest Grassland Farmland Settlement Industry Mining Railway Roads / dual carriageway Buildings Power line / mast Line of trees Swimming <u>pool</u> Museum	5																				

Question	Answer	Marks
2(a)	Population increases with time / positive relationship Gradual / steady / constant increase Data of two years with population e.g. 1960 – 17 million and 2015 – 54 million	3
2(b)	10.8 (reserve mark) 21.0 – 12.5 + 2.3 / birth rate – death rate + natural increase 8.5 + 2.3	2
2(c)	Increase Decrease Decrease	3

Question	Answer	Marks
3(a)(i)	CBD / city centre / commercial	1
3(a)(ii)	High / tall / multi-storey Close together Variety of styles Variety of heights / some short Flat roofs Concrete / windows Mostly white / grey / light colours / one red / brown Cuboid shapes Dome / spire Office / hotel etc. Max 1 for possible use	5
3(b)(i)	All the same style in 3.2 Larger windows in 3.2 Newer / more modern looking in 3.2 Same age in 3.2 Planned in 3.2	1
3(b)(ii)	Trees / bushes / plants Water feature	1

Question	Answer	Marks
4(a)	D A C	3
4(b)	40 mm per year To the east	2
4(c)	Plate boundary at C Conservative / plates move in relation to each other / different speeds E is in the middle of a plate	3

Question	Answer	Marks
5(a)	So thermometers are not exposed to the sun So not affected by ground temperature Standard height so readings are comparable	2
5(b)	A would receive direct sunlight (in the morning) / B is (always) in the shade A receives heat from the building / B is away from the building Bare ground below A radiates more heat / grass at B radiates less heat	2
5(c)	Bare / compacted soil gives rain splash Shelter from the tree Drip from the tree	2
5(d)	Up high / catches the wind Away from animals / people tampering with it Not at the top of the roof / sheltered (from west winds) Building can deflect winds	2

Question	Answer	Marks
6(a)(i)	Manufacturing / processing raw materials Putting together previously processed components / building a product	2
6(b)(i)	D	1
6(b)(ii)	A	1
6(c)(i)	Greenfield site / space to build Room to expand Cheaper land Air / visual / noise pollution less of a problem	1
6(c)(ii)	Small labour supply Small local market / far from market Lack of motorway / main roads No government incentives No training institutions / not a university town No port for exports Inadequate electricity / water supply	3

Section B

Question	Answer				Marks																
7(a)	<table border="1" data-bbox="339 315 1291 687"> <thead> <tr> <th data-bbox="339 315 493 434">Order</th> <th data-bbox="493 315 759 434">How often they are bought</th> <th data-bbox="759 315 1026 434">Average price of goods</th> <th data-bbox="1026 315 1291 434">Distance people are willing to travel</th> </tr> </thead> <tbody> <tr> <td data-bbox="339 434 493 517">High</td> <td data-bbox="493 434 759 517">Infrequently / not often / low / rarely</td> <td data-bbox="759 434 1026 517">high / expensive / maximum</td> <td data-bbox="1026 434 1291 517">further / long / far / maximum / large</td> </tr> <tr> <td data-bbox="339 517 493 600">Medium</td> <td data-bbox="493 517 759 600">moderate frequency</td> <td data-bbox="759 517 1026 600">moderate price</td> <td data-bbox="1026 517 1291 600">medium distance</td> </tr> <tr> <td data-bbox="339 600 493 687">Low</td> <td data-bbox="493 600 759 687">frequently / often / high</td> <td data-bbox="759 600 1026 687">low / cheap / small</td> <td data-bbox="1026 600 1291 687">short / less / not far / close / small</td> </tr> </tbody> </table> <p data-bbox="296 723 1310 786">Mark as vertical High / Low <u>pairs</u> i.e. 1 mark for <i>How often</i>; 1 mark for <i>Price</i>; 1 mark for <i>Distance</i>.</p> <p data-bbox="1246 790 1337 824">(3 · 1)</p>				Order	How often they are bought	Average price of goods	Distance people are willing to travel	High	Infrequently / not often / low / rarely	high / expensive / maximum	further / long / far / maximum / large	Medium	moderate frequency	moderate price	medium distance	Low	frequently / often / high	low / cheap / small	short / less / not far / close / small	3
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Low	frequently / often / high	low / cheap / small	short / less / not far / close / small																		
7(b)(i)	<p data-bbox="296 857 979 992">Construction of divided bar graph (Fig. 1.3). 1 mark for two dividing lines at 7 and 20 from left (1) 1 mark for third dividing line at 45 from left (1) 1 mark for shading in correct order from left (1)</p> <p data-bbox="1246 996 1337 1030">(3 · 1)</p>				3																
7(b)(ii)	<p data-bbox="296 1059 863 1093">Yes / hypothesis is TRUE – <u>1 mark reserve</u></p> <p data-bbox="296 1126 1310 1227"><u>High order</u> – greater <u>numbers</u> in Central Ladprao Plaza (1) with 114:7 (1) <u>Medium order</u> – greater <u>numbers</u> in Central Ladprao Plaza (1) with 173:13 (1) <u>Low order</u> – greater <u>numbers</u> in Central Ladprao Plaza (1) with 88:25 (1).</p> <p data-bbox="296 1261 1318 1328">Allow 2 max if make a general statement e.g. more high, medium, low order in CLP. Can accept refs to 'only' for statement mark;</p> <p data-bbox="296 1361 1273 1462">Can compare <u>numbers</u> between orders in both centres; e.g. Most / biggest number in CLP are middle order but largest in LV is low order (1) with 173 in CLP and 25 in LV (1)</p> <p data-bbox="296 1496 1289 1563">Credit 1 mark MAX / RESERVE for paired data comparing the two shopping centres.</p>				4																

Question	Answer	Marks
7(c)(i)	<p><u>Ideas such as:</u> Choose a variety of people / choose people of different age / gender / types / adults only (1) Decide on sample size / how long to ask people for (1) Don't ask people you know (1) Introduce yourself / explain purpose of survey (1) Have a system for choosing people such as every 10th person / random / have a sampling method (1) Accept if people don't want to answer / too busy / or fill it in / don't argue / be polite / thank them (1) Don't approach people in a <u>big</u> group / work in pairs or groups / don't work alone (1) Don't block pavements / doorways (1) Go to different parts of shopping area / don't all go to the same area (1)</p> <p style="text-align: right;">(3 · 1)</p>	3
7(c)(ii)	<p>Pie graph (Fig. 1.5) completion.</p> <p>One dividing line at 80% clockwise from 0% (1) 1st largest slice (35–80) shaded <u>Near home</u>; 2nd smaller slice (80–0) shaded <u>Good value for money</u> (1). MUST USE SHADING FROM KEY.</p> <p style="text-align: right;">(1 + 1)</p>	2
7(c)(iii)	<p>Hypothesis is TRUE – <u>1 mark reserve.</u></p> <p>Main / most top reason for shopping at each centre is different / top two reasons are different (1) 'Large variety' is top reason in Central Ladprao Plaza but 'near home' is top in La Villa (1) 'Near work' 2nd reason in CLP but 'good value for money' 2nd reason in LV (1)</p> <p>Credit paired data to show difference to 1 mark MAX / RESERVE 'Large variety' is 35% in Central Ladprao Plaza but 'near home' 45% in La Villa (1). 'Near work' is 22% in CLP but 'good value for money' is 20% in LV (1)</p> <p>Credit grouped data for top two reasons e.g. 57% in CLP and 65% in LV (1)</p>	4
7(d)(i)	<p>Plot bar for 7 cars at La Villa on Fig. 1.6. (1).</p>	1
7(d)(ii)	<p>Allow any two differences in statements and / or data between centres. No need to compare as long as differences are stated.</p> <p><u>Differences such as:</u> Car is most popular in Central Ladprao Plaza but monorail is most popular in La Villa (1) Underground train is popular in CLP but not used in LV (1) 0 / nobody uses monorail in CLP but 20 people use it in LV (1)</p> <p style="text-align: right;">(1 + 1)</p>	2

Question	Answer	Marks
7(d)(iii)	<p><u>Ideas such as:</u></p> <p>Distance to travel / from home to shopping centre (1) How long to travel to shopping centre / which method is faster (1) Likely duration of visit / how long shoppers stay (1) What / how much they are buying (1) Availability of regular bus service / underground train / monorail / car park / pedestrian precinct / cycles (1) Cost of car parking (1) Weather conditions / weather forecast / likely to travel by car if raining (1) Cost of travel / do shoppers own a car / can shoppers afford car / car sharing / can shopper afford petrol or bus fare (1) Traffic congestion / amount of traffic (1) How much time they have to shop (1) Risk of crime / safer to drive / prefer privacy / independence (1) Time of day (1)</p> <p style="text-align: right;">(3 · 1)</p>	3
7(e)(i)	<p><i>Area served by a town or service (1).</i></p>	1
7(e)(ii)	<p><u>Must refer to use of the data obtained.</u></p> <p><u>Examples</u></p> <p>Put results of questions in tables (1) Locate two shopping centres on 1 or 2 maps (1) Locate districts of Bangkok on a map (1) Decide on a key for dividing numbers into groups (1) Choropleth shading to show number of people from each district (1) Plot lines on map to show distances to each district (1) Draw a line / frame around furthest distances to show sphere of influence (1) Calculate range / average distance (1) Work out maximum distance travelled (1)</p> <p style="text-align: right;">(4 · 1)</p>	4

Question	Answer	Marks
8(d)(i)	<p><u>Examples</u> Rocks selected may not be typical / representative of the rocks at that site / anomaly (1) All rocks may have been taken from same area of river bed / not across channel / taken from same place (1) Not a fair / reliable sample / students choose rock / bias (1)</p> <p style="text-align: right;">(1 + 1)</p>	2
8(d)(ii)	Systematic (1)	1
8(d)(iii)	<p>Plotting length of pebble and average length on Fig. 2.2. <u>Length</u> = 13.4 plot above Site 2 (1). <u>Average length</u> = a horizontal line at 7.2 above Site 2 (1)</p> <p style="text-align: right;">(1 + 1)</p>	2
8(d)(iv)	<p>NOTE: Decision is given as PARTLY TRUE; do not credit any decision by the candidate.</p> <p><u>Evidence</u> Overall decrease in size / average size from <u>site 1 to site 5</u> (1) Main anomaly to trend is site 3 which contains largest average size (1)</p> <p>1 mark MAX. for paired <u>average</u> data from any two numbered sites e.g. Site 1 9.4 cm decreases in size to 6.8 cm at Site 5 (1) Anomaly at Site 3 which at 10.6 cm largest / larger than Site 1 at 9.4 cm (1)</p> <p style="text-align: right;">(3 · 1)</p>	3
8(d)(v)	<p><u>Examples</u> Attrition OR pebbles crash into each other (1) Abrasion / corrasion OR hitting river bed / bank reduces size (1) Corrosion / solution OR water dissolves rocks (1) Smaller pebbles moved further downstream as lighter to transport (1) Smaller pebbles found downstream because longer in water (1)</p> <p style="text-align: right;">(3 · 1)</p>	3
8(e)(i)	<p><u>Hypotheses must be written as a statement or question and relate to characteristics of the river.</u> NOTE: pebble size or gradient = 0 in (i) and (ii) If no response here (X NR) credit in (ii) to 2 max if method clearly relates to an appropriate hypothesis.</p> <p><u>Appropriate examples:</u> <i>River velocity increases downstream</i> (1) <i>Does river velocity vary across the channel?</i> (1) <i>Channel width increases downstream</i> (1) <i>Does channel depth increase downstream?</i> (1)</p> <p><u>Inappropriate examples:</u> <i>Temperature decreases downstream</i> <i>Does the river's salt content increase upstream?</i> <i>Pollution increases downstream</i></p>	1

Question	Answer	Marks
8(e)(ii)	<p><u>Will depend on Hypothesis chosen in 2(e)(i).</u> IF inappropriate choice or not stated as a hypothesis 2 MAX for method.</p> <p>Example 1 – method to measure channel width One student / pole on each bank / side of river (1) Place measuring tape across channel / from one bank to the other (1) Keep tape taut / stretched (1) Poles must be directly across / at 90 degrees to banks (1) Repeat at different sites and calculate average width (1) Record measurement <u>at each site</u> (1)</p> <p>Example 2 – method of measuring velocity using floats Put poles / sticks 10 metres or fixed distance <u>along river</u> (1) Use tape measure to measure distance (1) Put float / orange in river at start of distance (1) Start stopwatch / timer when float released at start point (1) Measure time taken for float to travel between poles (1) Stop stopwatch / timer when float passes end point (1) Repeat at different points and calculate average speed (1) Record results from <u>each site</u> (1)</p> <p>Example 3 – method of measuring velocity using flowmeter Put meter / propeller / flowmeter below surface of water / into water (1) Propeller must face upstream (1) No obstacles in front of propeller (1) Read / look at digital reading / display to see speed (1) Take several / repeat readings and calculate average speed (1) Repeat at different points and calculate average speed (1) Record results from <u>each site</u> (1)</p> <p style="text-align: right;">(4 · 1)</p>	4