

**MARK SCHEME for the October/November 2011 question paper  
for the guidance of teachers**

**2217 GEOGRAPHY**

**2217/23**

Paper 2 (Investigation and Skills), maximum raw mark 90

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 must be read in conjunction with the question papers and the report on the examination.

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- 1 (a) (i) Surfaced [1]
- (ii) Minor trigonometrical station [1]
- (iii) Terminal building [1]
- (iv) Ruin [1]
- (v) Cliffs  
Rocks  
Headland / peninsula (not Point) [2]
- (vi) Swamp [1]
- (vii) Runway  
Docks [2]
- (b) (i) 073492 [1]
- (ii) SW [1]
- (c) Beach / sand  
Pool  
Hotel  
Jetty  
Tennis Courts  
Golf Course [4]
- (d) 1950–2050 [1]
- (e) River with two tributaries  
River source  
Flows NE  
Valley  
Convex slopes  
Rises to 550+  
Valley drops to 75  
Two peaks  
Reserve 1 for drainage [4]

**[Total: 20]**

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- 2 (a) Flat  
Bare ground  
Beside road  
Next to garbage area [2]
- (b) Wide  
Flat  
Straight  
Dirt / unpaved  
Pylon in road [3]
- (c) Limited shelter from rain / sun  
Dust from road  
Noise from traffic  
Lack of privacy  
Lack of security  
Rubbish is source of disease [3]
- [Total: 8]**
- 3 (a) Plot on 40% line for primary  
Secondary and tertiary also accurate [2]
- (b) Sri Lanka more primary / South Korea less primary  
Sri Lanka less secondary / South Korea more secondary  
Sri Lanka less tertiary / South Korea more tertiary [3]
- (c) Decrease in primary industry  
Increase in secondary industry  
Increase in tertiary industry  
Increase in quaternary industry [3]
- [Total: 8]**
- 4 (a) (i) 620 [1]
- (ii) 7 [1]
- (iii) 0–10 and 60–350  
4.0–4.6 and 5.6–6.0 [2]
- (iv) No relationship [1]

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- (b) Converging plates  
 Lock together  
 Release causes seismic waves  
 Shallow focus earthquakes at subduction zone  
 Deep focus earthquakes further along plate boundary / under other plate [3]

**[Total: 8]**

- 5 (a) (i) Correct rainfall plot  
 Correct temperature plot [2]
- (ii) 4 °C [1]
- (iii) 1880 mm [1]
- (iv) Peak temperature is May to September [1]

- (b) Drip tip leaves  
 Thin smooth bark  
 Shallow buttress roots [3]

**[Total: 8]**

- 6 (a) (i) Correct division  
 Correct shading [2]
- (ii) % residents of Iceland has decreased / % international tourists has increased [1]
- (b) (i) Correct completion of graph [1]
- (ii) Italy and Spain [1]

- (c) Geysers  
 Glaciers  
 Lava fields  
 Waterfall  
 Hot springs  
 National Park  
 Shorelines  
 (Blue) Lagoon  
 2 attractions = 1 mark [3]

**[Total: 8]**

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### Section B

- 1 (a) (i)** Check the depth of water / do not work if river is in flood / storm  
 Check current / velocity of river / do not work if river is fast-flowing  
 Work in pairs / groups of three / do not work alone  
 Let people know where you are going / take mobile phone  
 Wear waterproof clothing / wellingtons / protective clothing / shoes / sunblock  
 Look out for dangerous animals  
 Do not do fieldwork if river is polluted / Weil's disease / water bottle  
 Work in daylight / not in dark  
 Beware of slippery rocks / sharp stones 3 @ 1 [3]
- (ii)** Agree methodology on what measurements to take  
 Practise fieldwork techniques  
 Test equipment  
 Make sure it's worth doing investigation / get to know the river / dangers 2 @ 1 [2]
- (b)** Width of channel:  
 Equipment: ranging poles / tape measure  
 Stretch tape measure across river / lay pole across river (1+1)
- Depth of river:  
 Equipment: ruler / measuring stick / pebble & string  
 Rest ruler on river bed / take reading at surface / wetted length of string or pole (1+1)  
 1 mark for equipment & 1 marks for method for both measurements [4]
- (c) (i)** Completion of cross-section  
 Plot 0.33 deep at 1.5; 0.2 deep at 2.0  
 1 mark for both plots, 1 mark for cross-section line  
 Shade in river channel = 1 mark [3]
- (ii)** 6.7–6.9 metres = 2 marks  
 6.6–6.69, 6.91–7.0 metres = 1 mark [2]
- (iii)** How: slows down flow / speed of river  
 Why: bed & banks create friction with moving water / rock obstacles in water (1+1) [2]
- (iv)** All measurements increase downstream from A to B to C  
 1 mark for use of comparable data (need unit) [2]

	A	B	C
Width (m)	1.3	2.3	6.5
Depth (m)	0.15	0.33	0.51
Wetted perimeter (m)	1.4	2.5	6.8 or measurement from ((ii))

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- (d) (i) Pebble size: measure long axis / length of pebble  
Roundness: estimates roundness of pebble by comparing with chart (1+1) [2]
- (ii) Plots on Fig. 4 (Size: 9; Roundness: 3.5) 2 @ 1 [2]
- (iii) Hypothesis 2 is correct – there is a relationship between size & roundness of pebbles – reserve  
As pebble size decreases roundness score increases or vice versa / it is a negative correlation (relationship) [2]
- (iv) Water becomes more powerful  
More attrition / erosion / pebbles crash into each other  
Pebbles crash into bed and banks / abrasion  
Smaller / rounder pebbles are moved further downstream because they are easier to transport  
Longer duration of transport so more attrition / erosion takes place [2]
- (e) Repeat measurements to check accuracy  
Repeat during different day / month / season to compare results  
Sample more pebbles at each site  
Different sampling techniques rather than random  
More students use Roundness Scoring chart and compare results  
More sites along river  
More depth points across river  
Investigation on another river  
Investigate volume or weight 4 @ 1 [4]

**[Total: 30]**

- 2 (a) (i) Where / which roads to do the survey  
Location of survey points / safe place / away from traffic lights  
Measure distance from town centre  
Which day / when to do the survey  
What time(s) to do the survey  
How long to record / count  
How many surveys to do in one day  
How to organise themselves – e.g. one student on each side of the road / number of students in each group / assigning students to sites  
What equipment they would need – stopwatch, counters, clipboard, paper for recording  
Synchronise timing  
Classification of traffic / what is traffic  
How to count and record / tally method  
Prepare tally chart 4 @ 1 [4]
- (ii) Easy / quick method to do  
Allows accurate totalling after 2 @ 1 [2]

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- (b) (i)** Cambridge (Road) [1]
- (ii)** Two bars drawn on Fig. 5, shading not required  
 Site 6: 100 vehicles (1 cm)  
 Site 8: 320 vehicles (3.2 cm) 2 @ 1 [2]
- (iii)** Hypothesis 1 is incorrect / false / partially true – reserve  
 No clear pattern on the four roads  
 Two roads show less traffic further away from centre / Queens Rd. / Robertson Dr.  
 Two roads show more traffic further away from centre / Wellington Dr. / Cambridge Rd.  
 But difference in amount of traffic variation is small on all roads  
 Amount of traffic varies between roads not distance from centre  
 Credit paired data for same road to 1 mark max – reserve [4]
- (c) (i)** Less data to work with so easier to use  
 Both sites along each road have similar results  
 Take too long to do all 8 sites [1]
- (ii)** Flow lines drawn on map – mark width of arrow base  
 Towards town centre: 90 vehicles (0.9 cm)  
 Away from town centre: 45 vehicles (0.45 cm) 2 @ 1 mark [2]
- (iii)** Queens Road  
 Robertson Drive  
 Wellington Drive  
 Must have road / drive [1]
- (iv)** Hypothesis 2 is correct / the amount of traffic going towards and going away from the town centre will change – reserve  
 More traffic / wider arrows going towards centre at 08.00 / morning  
 More traffic / wider arrows going away from centre at 17.00 / evening  
 Each road has the same pattern of movement  
 Credit paired data for am & pm for any 1 road to 1 mark max – reserve [4]
- (d)** Surveys done more frequently during the day  
 More survey points to give greater coverage / survey more roads  
 Surveys done on different days  
 Comparison with survey done on a non-work day such as weekend  
 More students / groups doing survey to minimise tallying errors / to check results  
 Use counters / stopwatch  
 Classification of types of traffic 3 @ 1 [3]
- (e)** There will be more traffic / many cars / lots of cars / many people  
 Why: in summer / one part of the year / weekend / evening / morning / holiday time / hotter / sunny  
 Activity on beach  
 Accept reverse reasoning if answer is 'less traffic / less people' [2]

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- (f) (i) Hypothesis such as:  
 Traffic-free zone has improved the town centre  
 Traffic-free zone causes problems for shop owners  
 Traffic-free zone attracts more shoppers to the town centre  
 There is less congestion in the town centre now there is traffic – free zone  
 The town centre is less polluted  
 It's safer to shop in the town centre [1]

- (ii) Questions such as:  
 How often do you shop in the town centre?  
 Do you think a traffic-free zone is a good idea?  
 What is one advantage of the traffic-free zone for you?  
 What is one disadvantage of the traffic-free zone for you?  
 Questions must be relevant to hypothesis in f (i)  
 If no hypothesis / inappropriate hypothesis in f (i) credit to 2 marks max for questions  
 which are broadly relevant to an investigation on a traffic-free zone 3 @ 1 [3]

**[Total: 30]**