

**MARK SCHEME for the May/June 2012 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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**Section A**

- 1 (a) (i)** 5698 [1]
- (ii)** 556932 / 3 [1]
- (iii)** Canal (Accept River) [1]
- (b) (i)** Rapid  
Powerline  
Orchard / Plantation  
Building  
Spot Height [5]
- (ii)** Location  
Change of angle [2]
- (iii)** 1540 metres [1]
- (c)** N or NE  
Lower land to NE  
Dam wall on north end of lake  
V of contours points upstream to south [2]
- (d)** NE  
5350 – 5550m or 5.35 – 5.55km
- Descending (to NE)  
1600 – 1460m  
Adjacent to river  
In valley  
(Sparse) bush
- Cultivated land  
Building / store  
Huts  
Dam  
Reservoir  
Track / cut line / game trail
- Reserve 1 for each of direction, distance, physical and human [7]

**[Max 20]**

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- 2 (a) (i) B [1]
- (ii) Correct labels on Fig. 2 [3]
- (b) (i) M [1]
- (ii) Around (edge of) Pacific / Pacific ring  
West coast of Americas  
East of Asia / Japan / Philippines / Indonesia  
New Zealand  
NE of Indian Ocean [3]
- [Max 8]**
- 3 (a) Meander [1]
- (b) Appropriate labels on Fig. 4 [4]
- (c) Erosion of outer bend  
Deposition on inner bend  
Cut through  
Ox-bow [3]
- [Max 8]**
- 4 (a) All of North America / USA / Canada  
Most of Central America / named country  
North of South America / named country  
South of South America / named country  
Western Europe / named country  
Israel  
Japan [4]
- (b) (i) Correct division [1]
- (ii) Europe [1]
- (c) Neighbouring country / long shared border  
MEDC / rich country / perceived opportunity  
Many gone before – tradition / language [2]
- [Max 8]**

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- 5 (a) (i) Completion of graph [1]
- (ii) 1 480 000 [1]
- (iii) 2003 – 2005 [1]
- (b) Overall increase  
Except decrease in 200 [2]  
Constant 1999 – 2000 [2]
- (c) (i) 2002 [1]
- (ii) Sold within internal market  
Storage for export in future years [1]
- (iii) Export demand determines production  
Demand for vehicles in internal market is stable  
Greater production means more can be exported [1]
- [Max 8]**
- 6 (a) (i) Explosion [1]
- (ii) Dolphins and (sea) turtles [1]
- (iii) Through bedrock [1]
- (b) 86 days [1]
- (c) Containment booms  
Skimmers / clean up tools [2]
- (d) Loss of fishing industry  
Loss of tourist trade / loss of income in service industries  
Decreased food supply [2]
- [Max 8]**

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### Section B

- 7 (a) Keep away from base of cliff/overhang  
 Don't stand on edge of cliff  
 Check tide times before setting off  
 Do fieldwork at low tide  
 Avoid **slippery** rocks  
 Measure waves from safe position, not in sea/don't go too far/deep into sea/face the sea  
 Gloves to protect hands  
 Wear suitable/waterproof clothes/shoes  
 Check weather conditions/for stormy weather/avoid big waves  
 Work in pairs/groups/not alone  
 Let others know where you are  
 Take mobile/cell phone  
 Sunblock/first aid kit/bottled water  
 3 @ 1 [3]
- (b) (i) Use stopwatch/timer/clock  
 Count number of waves breaking/going up beach/hitting stick or person  
 In 1/5/10 minutes/specified time  
 Take an **average** of a number of readings  
  
 ^ count number of waves  
 ^ do this several times [3]
- (ii) Plot bar B on graph = 9  
 Ignore width of bar and shading [1]
- (iii) High frequency/many waves per minute/10 – 16 waves per minute/short wavelength  
 Strong backwash/weak swash/stronger backwash than swash  
 Large height/big amplitude  
 Erosional/takes away more sand than brings in  
  
 ^ powerful/strong  
 ^ large  
 2 @ 1 [2]
- (c) (i) **Tape measure:** lay it out along transect line  
 Measure distance between ranging poles/put poles at equal distance  
**Ranging poles:** poles at either end of measured distance  
 Ensure they are vertical  
 Rest on surface/equal depth into sand  
**Clinometer:** student holds clinometer next to top/at agreed height on ranging pole  
 Sight other ranging pole at top/agreed height/same height  
 Allow clinometer to adjust to angle  
 Read angle/measure angle/measure slope  
 Reserve 1 mark for each piece of equipment [5]
- (ii) 4.5 [1]

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- (iii) Hypothesis is true/agree/beach is steeper where waves are more frequent  
(reserve)  
Hypothesis is wrong/partly true = 0
- Average frequency at A is 16 per min. and average angle is  $9^\circ$   
Average frequency at B is 9 per min. and average angle is  $4.5^\circ$   
Average frequency at C is 7 per min. and average angle is  $3.25^\circ$   
Need comparison of two sites (4 pieces of data)  
A has most waves per minutes/highest wave frequency and steepest angle of slope/C  
has least waves per minute/ lowest wave frequency and gentlest angle of slope [2]
- (d) (i) Put quadrat on ground/used quadrat  
Select sample of 7 stones  
Measure stone **with** tape/rule/callipers/pebbleometer  
Measures longest axis/length  
Read in mm  
Add up measurements and divide by number of samples/calculate the average length [3]
- (ii) Diamond-shaped plot on scatter graph 10 m = 76 mm (on line) [1]
- (iii) Hypothesis is true/partially true/true up to 10 m/larger beach material where waves are more frequent  
Hypothesis is wrong = 0
- At A wave frequency greatest, beach material is largest/at C wave frequency is least, beach material is smallest
- At A at 2 m average frequency = 16 and beach material = 74.2  
At C at 2 m average frequency = 7 and beach material = 3.6
- Transect average overall: A = 89, B = 54.6, C = 40.6  
Need A B C comparison at specific distance (4 pieces of data)
- But an anomaly **at 12 m**/where there is larger beach material where waves are less frequent [4]
- (e) More measurements of wave frequency (students only did one at each location)/collect more rock samples  
Collect data at different times of year/different seasons/ different day  
Count waves breaking over 10 minutes/specified time and calculate average  
Collect data at more locations/transects/other beaches/more profile measurements  
Collect data in different weather conditions  
More students do same measurements/student repeats experiment/measurement several times  
Use more accurate measuring instrument [3]

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- (f) Waves through:  
Breakwater/harbour wall/ harbour  
Offshore barrage barrier out at sea  
Coastal defences/sea wall

Beach through:  
Groyne  
Replenishment/man-made beach  
Removal of material  
No reserve for waves or beach  
2 @ 1

[2]

**[Total: 30 marks]**

- 8 (a) Historic growth from centre outwards/built at different times  
Influence of physical features such as river valley  
Influence of human features such as railways, roads/accessibility  
Value/cost of land (for different uses)/price of land varies  
Availability of space/land  
2 @ 1

[2]

- (b) (i) Circle location  
Made a decision about the score for each category/what they thought was the score  
Put a tick in the appropriate column/filled in the chart/sheet

[2]

- (ii) Opportunity to test features/grading to see if they are suitable how features are graded  
Gives a known standard/control to compare against  
Check on methodology consistency/check for any errors/mistakes/improve survey  
Practice survey/get used to sheet  
Improves ability to work as a team  
2 @ 1

[2]

- (c) (i) Completion of bi-polar graph for area B  
2 marks for plots (4 correct = 2 marks, 2/3 correct = 1 mark)  
1 mark for line

[3]

- (ii) Area C/furthest from town centre has positive/highest score or total or index/area A is nearest to town centre has negative lowest score or total or index/score or total or index increases as move away from town centre

A = -7, B = 0, C = +13, (any 2)

Area C has +2 for six features but areas A/B has +2 for no feature  
Area A has -2 for 4 features but area C has no minus scores  
Area C has highest score for every feature  
Area C has all neutral or positive scores but area A has some negative scores  
Increase in feature scores from A to B to C  
Except for open space/vandalism/litter

[4]

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- (iii) One road may not be representative of the area/only three roads surveyed  
Scores may vary if done at different times/different days  
Scores are subjective/biased  
Could be other features which are not included in survey e.g. education, crime  
2 @ 1 [2]
- (d) (i) Stratified sampling/reflect population  
Appropriate gender balance/male – female balance  
Appropriate age balance/different ages  
1 max for Systematic or Random sampling [3]  
(ii) Circling Surgery 5 – 30 and Cinema more than 30 [1]
- (iii) Many people will not walk to services/go by car/bus/transport  
People may not go to the nearest service/more than one service to go to  
People walk at different speeds/people walk faster on one day than another  
People walk by different routes  
Estimated times may be inaccurate/vague/people don't know/guess  
Take them longer when it's busy  
Don't use specific services  
2 @ 1 [2]
- (iv) Complete score for local store = 3  
Calculate accessibility index score = 20  
2 @ 1 [2]
- (v) Plot answer to (d)(iv) – should be 20 above resident 1 on Area B of dispersion graph [1]
- (vi) Circle median value of area C = 22 [1]
- (vii) Hypothesis is not true/false/disagree  
Accessibility index values have a similar range in all three areas/similar pattern in all three areas/no clear pattern  
**Median** value is higher in area C/very similar  
Comparison of A = 20 and C = 22 (allow score or index, don't need median)  
More index values over 25 in area C than area A  
Hypothesis is true = 0  
No reference for credit to area B [3]
- (e) Accessibility to different services depends where people live in an area/some houses are/people live further away from services than others  
Variable access to paths/people walk by different routes  
People may not go to the nearest service/more than one service to go to  
2 @ 1 [2]

[Total: 30 marks]