

**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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Page 2	Mark Scheme: Teachers' version	Syllabus	
	GCE O LEVEL – May/June 2012	2217	

Section A

- 1 (a) (i) 5698
- (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]

Page 3	Mark Scheme: Teachers' version	Syllabus	
	GCE O LEVEL – May/June 2012	2217	

- 2 (a) (i) B
- (ii) Correct labels on Fig. 2
- (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]

Page 4	Mark Scheme: Teachers' version	Syllabus	
	GCE O LEVEL – May/June 2012	2217	

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

Page 5	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2012	2217

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]

Page 6	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2012	2217

(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°
 Average frequency at B is 9 per min. and average angle is 4.5°
 Average frequency at C is 7 per min. and average angle is 3.25°
 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]

Page 7	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2012	2217

- (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]

Page 8	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2012	2217

- (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]