

**MARK SCHEME for the May/June 2014 series**

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| <b>2217 GEOGRAPHY</b> |  |
| <b>2217/23</b>        | Paper 23 (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 should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2014 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

Section A

- 1 (a) (i) Huts
- (ii) Cultivation 1
- (iii) Smooth rock 1
- (iv) Spot height 1
- (b) 480760 1  
479760  
479759
- (c) (i) Wide tarred 1
- (ii) Goes SW 7  
Turns south
- 4700 - 5000 metres
- Crosses (medium) bush  
Avoids high / steep land / Chontsi  
Mainly between 1060m and 1080m  
Gentle slope / bottom of steep slope  
Crosses streams / small rivers
- Mainly on cultivated land  
Embankment  
Cutting  
Passes buildings / settlement  
Junctions with other roads / gravel / earth road / track
- Reserve 1 mark for each section
- (d) 1573.2 m / 1573 m 1
- (e) High in SE 6  
Up to 1280m  
Steep slopes in SE  
Slopes face NW  
Very gentle / flat in NW  
Small valleys descend from high land
- Rivers in hills / high land  
Rivers flow NW  
Tributaries  
Dendritic pattern  
Rivers vanish in cultivated area  
Only one river crosses cultivated area  
High(er) density on hill / low(er) density on cultivated land  
Springs on cultivated land

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|--------|-----------------------------|----------|----|
| Page 3 | Mark Scheme                 | Syllabus | or |
|        | GCE O LEVEL – May/June 2014 | 2217     |    |

- 2 (a) (i) Appropriate line on graph
- (ii) Older tombstones have more surface reduction  
Newer tombstones have less surface reduction  
Negative relationship 1
- (b) Carbon dioxide / industrial emissions dissolve in rainwater  
Chemical reaction between acid and (calcium carbonate in) rocks / acid  
dissolves rocks 2
- (c) (i) All correct = 2 marks  
1 wrong = 1 mark  
2 or more wrong = 0 marks 2
- (ii) Wollongong 1
- (iii) More industry  
More urban emissions  
More air pollution 1
- 3 A - Arch 5  
B – Stack / island  
C - Cliff / headland  
D - Wave Cut platform  
E – Cave
- (b) B / C to D 3  
Erosion at base of cliff  
Undercutting  
Exploits weaknesses  
Wave cut notch  
Cliff falls  
Rock below low water is left as platform
- E to A  
Erosion exploits weaknesses  
Cave enlarges backwards  
Similar process on other side of headland  
Two caves meet causing opening of arch
- A / C to B  
Erosion exploits weaknesses  
Arch is enlarged  
Overlying rock unsupported  
Top of arch collapses
- E to B  
Erosion exploits weaknesses  
Cave enlarges backwards  
Similar process on other side of headland  
Two caves meet causing opening of arch

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|---------------|------------------------------------|-----------------|-----------|
| <b>Page 4</b> | <b>Mark Scheme</b>                 | <b>Syllabus</b> | <b>or</b> |
|               | <b>GCE O LEVEL – May/June 2014</b> | <b>2217</b>     |           |

Arch is enlarged  
 Overlying rock unsupported  
 Top of arch collapses

If no features chosen – Max 1 for named / described erosion process.

- 4 (a) (i)** Maize 1
- (ii)** Banana and Mango 1
- (b)** 45 - 60 metres 2  
 SW / SSW
- (c)** Rocks 2  
 Road / track  
 Scrub  
 River  
 Huts  
 Used for cattle
- (d)** Close to huts so easy access / lots of attention needed 2  
 Huts for shelter  
 Fertiliser for trees  
 Controls grass / weeds in compound  
 Fence prevents them escaping / getting lost  
 Fence protects from theft  
 Fence stops them eating the crops  
 Fence keeps out predators  
 Fence stops them straying on to road
- 5 (a) (i)** El Hierro 1
- (ii)** 30 1
- (b)** Correct completion of graph 1
- (c) (i)** 540 people per km<sup>2</sup> 1
- (ii)** Tenerife 1
- (d) (i)** Lanzarote 1  
 La Palma  
 Fuerteventura  
 La Gomera  
 El Hierro  
 La Graciosa

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|---------------|------------------------------------|-----------------|-------------|
| <b>Page 5</b> | <b>Mark Scheme</b>                 | <b>Syllabus</b> | <b>2217</b> |
|               | <b>GCE O LEVEL – May/June 2014</b> |                 |             |

- (ii) Some correlation / (weak) positive relationship  
Highest totals correspond to highest density / lowest totals correspond to lowest density  
Rankings reversed for Gran Canaria and Tenerife  
Rankings reversed for La Palma and Fuerteventura  
Larger islands also have large populations / smaller islands also have small populations

- 6 (a) Cocoa beans 1
- (b) (i) Cleaning 2  
Pressing
- (ii) Conching for longer time 1
- (iii) A is Cocoa butter 2  
B is Chocolate
- (c) Distance to raw materials 2  
Distance to markets  
Labour supply  
Transport routes  
Energy supply  
Size / cost of site  
Government policy

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|--------|-----------------------------|----------|--|
| Page 6 | Mark Scheme                 | Syllabus |  |
|        | GCE O LEVEL – May/June 2014 | 2217     |  |

**Section B**

- 7 (a) (i) Easy to read / convenient to read / use / less chance or error  
Instant measurement / quick / saves time  
Accurate / gives decimal point reading / exact / precise / sensitive  
Portable / easy to carry  
Can be read remotely
- NOT: robust / cheap / stores a record of temperatures / can reset to zero / reliable / easier to set up
- If answer is from point of view of traditional instrument there must be comparison  
2 @ 1 [2]
- (ii) Screen is painted white...so that it reflects heat or sunlight / reduces direct heating by the sun / does not absorb sunlight  
Sides are made of slats / louvres / have spaces / gaps / not solid...so that air can circulate  
Screen / box is made of wood...so that heat is not conducted into it  
Roof is made of a double layer of wood...so that airspace provides insulation  
Screen stands more than 1 m / raised on legs above the ground...so that instruments are not affected by heat from the ground
- NOT: wind / keep rain out / box to protect instruments / holes in side / not affected by sun / above ground  
3 + 3 marks [6]
- (iii) Thermometer [1]
- (iv) Cloud cover  
Cloud type  
Wind speed  
Wind direction  
Sunshine hours / amount  
Actual / current temperature
- NOT: wind / cloud / temperature [1]
- (v) Wet and dry bulb thermometer / hygrometer  
Barometer / barograph
- NOT: wet and dry bulb / hydrometer 2 @ 1 [2]
- (b) (i) Read every 24 hours / fixed period of time  
Indices (markers) left at / show the minimum **and** maximum temperatures  
Read off the bottom of the index  
Read at eye level  
Magnet to reset / button to reset
- NOT: read the index [3]

|        |                             |          |
|--------|-----------------------------|----------|
| Page 7 | Mark Scheme                 | Syllabus |
|        | GCE O LEVEL – May/June 2014 | 2217     |

- (ii) Gauge stood firmly / dug in ground  
 Funnel and jar placed in casing / gauge  
 Rain enters gauge / jar through funnel / collects in jar / collects in rain gauge  
 Noting / recording water level in jar / water poured into measuring cylinder  
 Reading taken every day / at same time each day / fixed time period  
 Empty jar after measuring

NOT: recording in table / below ground / underground / measure after the rain stops / eye level

NOT: open ground / away from trees / grass not concrete / flat land [3]

- (c) (i) Completion of temperature line 4°C and 7.5°C (credit 4°C plot on vertical line or within square)  
 Minus 1 mark for each error [2]

- (ii) Hypothesis is **true / generally true / partly true / agree** with hypothesis / bigger difference between maximum and minimum temperatures in Pretoria  
 1 mark reserve (✓HA)

Bigger gap on graph between maximum and minimum temperature lines in Pretoria than in Cape Town

1 mark for identifying date to support hypothesis with statistics – 4 stats or 2 difference stats (0.5° tolerance on stats)

e.g. July 1: Pretoria max temp = 15.5°C and min temp = 0.8°C and in Cape Town max temp = 15.9°C and min temp = 3.7°C OR Difference = 14.7°C in Pretoria and 12.2°C in Cape Town

1 mark for identifying anomaly date with statistics – 4 stats or 2 difference stats (0.5° tolerance on stats)

e.g. July 3: Pretoria max temp = 15.2°C and min temp = 5.2°C and in Cape Town max temp = 18.8°C and min temp = 4.1°C OR Difference = 10.0°C in Pretoria and 14.7°C in Cape Town

Hypothesis conclusion is incorrect / false = 0 (XHa)  
 If no hypothesis conclusion ^HA and credit evidence [4]

- (d) (i) Completion of rainfall bars for 2 days  
 15 mm on 28<sup>th</sup> and 4 mm on 29<sup>th</sup> 2 @ 1 [2]

- (ii) Hypothesis is **false / incorrect / disagree** with hypothesis – 1 mark reserve (✓HA)

No relationship between maximum temperature and amount of rainfall  
 OR less or no rain as temperature increases or high temperature or maximum temperature

OR more rain as temperature decreases or lower temperature or minimum temperature

At highest temperature / 24.6° or 25° there is no rainfall

1 mark for data which compares temperature and rainfall to disprove hypothesis  
 e.g. 16.4°C and 13mm compared with 17.2°C and 2mm

Hypothesis conclusion is correct / true / partly true = 0 (XHa)  
 If no hypothesis conclusion ^HA & credit evidence [4]

[Total: 30 marks]

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|--------|-----------------------------|----------|
| Page 8 | Mark Scheme                 | Syllabus |
|        | GCE O LEVEL – May/June 2014 | 2217     |

- 8 (a) (i) Groups sampled buildings in different areas of CBD / looked at different buildings in different directions  
 Buildings in CBD vary in number of storeys / vary in height  
 Land use varies in CBD / offices have taller buildings / shops have less storeys than offices  
 Age of buildings vary / some are newer than others [2]
- (ii) Complete bars – 2.0 storeys at 2km on West transect and 2.7 storeys at 1 km on North transect 2 @ 1 [2]
- (iii) **Generally / partially / to some extent / mainly / not completely** – 1 mark reserve (✓HA)
- True for North / West transect / average height does reduce at each distance from CBD
- Statistics to support: North from 7.5 or 2.7 down to 1.0 / West from 8.2 or 2.3 down to 1.0
- Not true for South / East transect / anomaly / height does not reduce at each distance from CBD
- Statistics to support: South from 1.2 at 3km to 1.8 at 4km / East from 1.7 at 1 km to 5.9 at 2km
- Hypothesis conclusion is incorrect / false / correct / true = 0 (XHa)  
 If no hypothesis conclusion ^HA and credit evidence [4]
- (iv) Value of land increases where there is limited amount  
 Higher value land / higher price land / higher cost of land requires higher buildings  
 Limited amount of land / higher land price / competition for space means buildings must grow upwards OR more space so buildings are lower  
 Different land uses / examples of two land uses
- NOT: amount of space / accessibility / transport [2]
- (b) (i) Shading Hungry Lion as commercial and President Hotel as services 2 @ 1 [2]
- (ii) 12 [1]
- (iii) Ground floor is easiest to see / record land use / easier work  
 Cannot see what upper storeys are used for / unable to enter building  
 Takes too long to record use of all storeys / save time / quicker
- NOT: too much work / too much trouble / cannot be bothered / multiple uses / most variety of land use on ground floor / upper floors are mainly offices / ground floor is used most frequently [1]
- (iv) Completion of CBD pie chart – residential = 2, commercial = 63,  
 Offices = 25, services = 10%  
 2 marks for correct position of dividing lines – 2, 65, 90 (minus 1 mark for each error in position of dividing lines)  
 1 mark for shading  
 If lines are wrong way round this only counts as one error and candidate can still score 2 marks if all segments are correct size and shading is correct [3]



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|--------|-----------------------------|----------|--|
| Page 9 | Mark Scheme                 | Syllabus |  |
|        | GCE O LEVEL – May/June 2014 | 2217     |  |

- (v) North transect has higher percentage of residential / more residential  
lower percentage of commercial / less commercial  
lower percentage of industry / less industry

NO credit for services or offices

East transect has lower percentage of residential / less residential  
higher percentage of commercial / more commercial  
higher percentage of offices / West has no offices but East does  
higher percentage of services / West has no services but East does  
no industry unlike West

Mainly residential in West and mainly commercial in East

No credit for statistics, must be interpretation 2 @ 1 [2]

- (vi) Hypothesis is **true / partly true / generally true** – 1 mark reserve (✓HA)

Need comparison with other areas OR 2 comparative stats (1 must be CBD)

Commercial – largest percentage / most in CBD OR commercial = 63% in CBD and 7% in North

Offices – largest percentage / most in CBD OR stats

Residential – smallest percentage / least in CBD OR stats

Industry – none in CBD but located in three of transects / less in CBD than East or South or West transect OR stats

Services – less in CBD than East / more in CBD than North or South or West OR stats

Hypothesis conclusion is incorrect / false = 0 (XHa)

If no hypothesis conclusion ^HA & credit evidence [4]

- (c) Factors such as:

Growth of city spatially

Development of city over time

Transport links – road / rail / air / river / accessibility

Competition for land / bid rent

Cost of land / cheaper out of city

Availability of land / amount of space

Relief / flood plain

Wind direction

Planning policy

Close to raw material for industry / mining subsidence [4]

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|----------------|------------------------------------|-----------------|--|
| <b>Page 10</b> | <b>Mark Scheme</b>                 | <b>Syllabus</b> |  |
|                | <b>GCE O LEVEL – May/June 2014</b> | <b>2217</b>     |  |

- (d) Bigger sample size than 6 buildings for number of storeys
- More transects to cover larger area of city
- More data collection points than 4 along each transect
- Extend transect further out
- Only collect one set of building heights in CBD
- Record land use in upper storeys
- Have more than 5 land use categories
- Do a pilot survey
- Check where there is an anomaly

Answer must relate to work done not possible new work

NOT: count storey twice / tally / use clicker / different days / more people measure same thing / do in another city / repeat fieldwork

3 @ 1 [3]

**[Total: 30 marks]**