CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

MARK SCHEME for the May/June 2014 series

0460 GEOGRAPHY

0460/43   Paper 4 (Alternative to Coursework), maximum raw mark 60

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.

1 (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]

(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 reach 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 28th and 4 mm on 29th　　　　　　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 13 mm compared with 17.2°C and 2 mm

Hypothesis conclusion is correct / true / partly true = 0 (XHa)
If no hypothesis conclusion ^HA & credit evidence　　　　　　[4]
[Total: 30 marks]

2 **(a) (i)** Groups sampled buildings in different areas of CBD / looked at different buildings / went 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 2 km 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 3 km to 1.8 at 4 km / East from 1.7 at 1 km to 5.9 at 2 km

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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(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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(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]