MARK SCHEME for the October/November 2015 series

0460 GEOGRAPHY

0460/42	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.

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1 **(a)** **(i)** <u>Examples</u>

Give instant readings/faster/quicker/saves time (1)
Easy to use/clear to read/larger digital readout/no parallax error/less complex/simpler to use (1)
Don't need to know how to read digital thermometer/don't have to read off thermometer (1)
Exact figures/accurate/precise (1)
Less chance of making mistakes in reading/mis-reading/less errors/error free (1)
Portable/can be used at more than one site/easier to reset/don't need to reset (1)
Can download results to computer/store data (1)
Safer if dropped because no mercury/sturdier if dropped (1)   [1 + 1 + 1 = 3]

(ii) <u>Examples</u>

Take more than one reading with different digital/other thermometer (1)
Partner/other student checks readings are accurate (1)
Take more readings and calculate the average (1)   [1 + 1 = 2]

(b) **(i)** 35.6 °C.   [1]

(ii) 4 m.   [1]

(iii) Plot 36 at 4 m (1) and 35.2 at 8 m (1). No credit for line/time of plot.   [1 + 1 = 2]

(iv) **The Eno building** – <u>1 mark reserve</u>.
<u>Comparative evidence for Eno building being best choice; do not credit individual sites.</u>
Average temperature at 0.5 m/next to Eno building is higher than Guyot (1)
Temperature next to Eno building 31.2 C but only 29.9 C at Guyot (1) OR 1.3 C higher (1)
– <u>no need to state average if stats used are the average stats</u>.
Temperature at Eno decreases from 31.2 C at 0.5 m to 30.8 C at 8 m but at Guyot average temperature increases from 29.9 C at 0.5 m to 30.3 C at 8 m (1)
– <u>no need to state average if stats used are the average stats</u>   [1R + 1 + 1 = 3]

(v) <u>Examples</u>

Buildings absorb/store heat from sun or internal heating system (1)
Buildings radiate/emit heat (1)
Buildings sheltered from cooling influences e.g. wind/rain (1)   [1]

(vi) 8 m   [1]

(c) (i) 34.2 (Accept 34.24 as **TICK JU**) [1]

(ii) Should plot 34.2/34.24 with <u>small circle</u> at 12.30 for the mark.
IF calculation wrong in (c)(i) must credit the ensuing plot if correct on the graph to avoid ECF. [1]

(iii) <u>Examples of evidence (All refs to **average** temperatures NOT single data)</u>

Average temperatures all higher at all <u>distances</u> from Eno building which is south facing (1)
At all <u>times</u> except 06.30 **average** temperatures higher at Eno building (1)
Only one time/06.30 when **average** temperatures are the same/22.6 C at both buildings (1)

<u>Credit paired data (can be two time refs or two distance refs or one time and one distance. Must refer to **AVERAGE** temperatures to **2 marks max** but do not need to use the word 'average' if statistics used are the averages</u>

e.g. Eno building 31.2 C at 0.5 m compared to Guyot with 29.9 C at 0.5 m (1) OR 1.3 C higher at 0.5 m at Eno.(1)
At 15.30 Eno building 35.7 C but Guyot only 35.1 C OR 0.6 C higher at Eno at 15.30. (1) [1 + 1 + 1 = 3]

(iv) <u>Examples</u>

Guyot building/north facing side in shade (1)
Eno building/south facing side in sun (1)
Heating may have been switched on in Eno not in Guyot (1) [1]

(v) <u>Examples</u>

Colour of ground surface (albedo)/ability to reflect or absorb heat (1)
Type of land-use/vegetation/ground material (1)
Height above sea level (1)
Type of building materials (1)
Shelter from/exposure to wind (1)
Presence of water/lake so differential heating/cooling/humidity (1) [1]

(vi) <u>Examples</u>

Take temperature readings at closer distances/more sites on the day (1)
Take temperature readings at other/more times in the day (1)
Take temperature readings on more/different days (1)
Check readings in pairs/with a partner/within group (1) [1 + 1 = 2]

(d) (i) *The amount of moisture in the air as a percentage of the total moisture it could hold at that temperature.* [1]

(ii) <u>1 mark MAX for stating the difference.</u>
 e.g. Dry bulb/thermometer on LHS shows higher temperature (1)
  Wet bulb or thermometer RHS shows lower temperature (1)
  Dry 24 C and Wet 15 C/dry is 9 C higher (1)

 <u>Three marks max for reasons for differences</u>:
 Dry bulb/LHS thermometer higher because:
 Exposed to the air giving the air temperature (1)
 Dry bulb/LHS thermometer is higher as no cooling effects on the bulb (1)

 Wet bulb/RHS thermometer is lower because:
 Bulb linked to container of water (1)
 Bulb wrapped in cloth/muslin/wick (1)
 This keeps the bulb continuously moist/cool (1)
 Heat lost in evaporating water/moisture (1)   [1 + 1 + 1 + 1 = 4]

(iii) Wet bulb temperature = 15 °C
 <u>Difference = 9 °C (1)</u>

 <u>Relative humidity = 36% (1)</u>
 1 mark for calculation ALLOW ECF.   [1 + 1 = 2]

[Total: 30 marks]

2 (a) (i)

Time	09.30 – 09.45
Day	Monday
Month (Season)	July (Summer)
Number of visitors	27

1 mark for time, day, month. Allow ticks or underlines.

1 mark for tally showing 27 as 5 units of 4 vertical strokes crossed through plus 2 single strokes.   [1 + 1 = 2]

(ii) Examples

Start at the correct/same time (1)
Finish at the correct/same time (1)
Use a watch/timer/cell phone to time (1)
Work in pairs/within group/more than one person to count/check (1)
Use tally method to record pedestrians (1)
Use same location at all three times (1)   [1 +1 + 1 = 3]

(iii) Examples

More people on Sundays/less people on Monday/compare numbers (1)
Sunday non-working day/Monday working day (1)   [1 + 1 = 2]

(iv) Examples

HOW: Less visitors (1R)
WHY: Not in the main tourist season/January colder/lower temperature (1R)
                                                                  [1R + 1R = 2]

(v) Completion of two bars at 16.30 in Valledoria. 46 (Sunday) and 35 (Monday)
1 mark for each correct plot; ignore shading or bar width.   [1 + 1 = 2]

(b) (i) <u>Examples</u>

Score may vary:
Carry out pilot study to develop consistency/agreement on scores (1)
Work in groups and discuss/agree score (1)
Calculate the average score from a group of students (1)
Score may vary at different times:
Make sure both surveys are done at same time/agree a time for survey (1)   [1 + 1 = 2]

(ii) +4. Must have +   [1]

(iii) <u>Three small circular plots needed as follows; ignore any line joining them:</u>
Beach facilities at –2
Views behind beach at +2
Noise at +1

All correct = 2 marks, 1 or 2 correct = 1 mark.   [1 + 1 = 2]

(iv) Question requires <u>data</u> evidence for Valledoria having more visitors and being more attractive e.g.

<u>Number of visitors: (1 max)</u>
Sunday – Valledoria = 144, Badesi = 129/Valledoria 15 more (1)
OR Monday – Valledoria = 119, Badesi = 116/Valledoria 3 more (1)
OR Total – Valledoria = 263, Badesi = 245/Valledoria 18 more (1)

<u>Attractiveness survey (1 max)</u>
Valledoria = +4/4, Badesi = +2/2 OR Valledoria 2 more (1)   [1 + 1 = 2]

(c) (i) *Looking at the scenery* = 20
Sailing = 17
Walking = 14

All correct = 2 marks, 1 or 2 correct = 1 mark.   [1 + 1 = 2]

(ii) Hypothesis is CORRECT/TRUE – 1 mark reserve.
<u>If say False/Incorrect/Partly True = X HA and no further marks</u>

Main reasons at each place are completely different/specific named examples from table
e.g. sunbathing top in Badesi but windsurfing top in Valledoria (1)

<u>Credit paired data to show differences to 2 marks max</u>
e.g. sunbathing is rank 1/23% in Badesi & rank 8/3% in Valledoria (1)
      17% visit Badesi for shopping & no visitors go to Valledoria for shopping (1)
[1HA + 1 + 1 + 1 = 4]

(iii) To see if there is any relationship between age/gender of visitors and reasons for visit/activities chosen.   [1]

(iv) Visitors may have come for more than one reason/might not be one main reason   [1]

(d) 1 mark for each question and 1 mark for each reason.

It is not the case that all questions are valid; credit only those questions that extend the survey into tourism and are appropriate/relevant. <u>See examples.</u>

<u>Examples of appropriate questions:</u>

Is there anything you do not like in this area? (1)
To find out what needed to be improved to attract more visitors (1)

Where have you come from today? (1)
To find out information about catchment area/sphere of influence (1)

How long are you staying in this area? (1)
To find out if tourists are mainly one day visitors or staying in the area (1)

What type of accommodation are you staying in? (1)
To find out the preferred demand for hotels, self-catering, camping, etc. (1)

Is there another reason for your visit?
To find out additional activities other than the main reason (1*)*

Are you travelling alone or with others/your family? (1)
To find out if the resort attracts certain groups/individuals (1)

*What transport did you use to get here? (*1)
To find out travel patterns such as use of cars, rail (1)

Do you come here often? How many times have you visited here? (1)
To find out if resort attracts regular custom (1)

<u>Examples of inappropriate questions</u>

What is your marital status?
How much money have you brought with you/how much will you spend?
Which place do you like the most? (May not have been to both)
How many information boards are there?
Are you a tourist or resident? (See intro to questionnaire)   [2 × (1 + 1) = 4]

[Total: 30]