

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2015 series

0460 GEOGRAPHY

0460/41

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.

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- 1 (a) (i) Use tape to measure distance
 Students hold ranging poles at either end of measured distance
 Poles must be vertical
 Student holds clinometer next to top / at agreed height on ranging pole
 Sight / line up other ranging pole at top / agreed height
 Read off the angle / measure angle / record angle / measure degrees – need reference to **clinometer** [4]
- (ii) Advantage:
 Give instant reading / faster / quicker
 Precise / accurate measurement or reading / exact figure
 Easy to use / clear to read / large digital readout / hard to read clinometer
 Don't need to know how to use a clinometer / don't have to read off clinometer
 Less chance of making mistake in reading / misreading
 Easier to reset
 Can download results to computer / save data
 Easy to carry / portable
- Disadvantage:
 May not understand how to use the app
 May drop phone into river / phone is fragile / phone gets wet
 Phone may not be charged up/ battery may run out [2]
- (iii) These results are anomalies / do not fit with other results / too big / too small / not near the average
 Results are measured incorrectly
 Remove the effect of the anomaly on the average / would affect the results
 Give a more reliable / accurate average result / result not reliable / inaccurate [2]
- (iv) Average = 5.8° Accept 5.83 ✓JU
 Credit in table or in space for calculation [1]
- (v) Result of **a(iv)** plotted on Fig. 3 (ecf) [1]

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- (vi) Results **support** hypothesis – 1 mark reserve (✓HA)
 Credit paired **average** data from different sites to 2 marks max 3 sites + data = 2 marks,
 2 sites + data = 1 mark
 e.g. 17.2° at site 1 / 90 m, 11.2° at site 2 / 70 m, 5.8° at site 3 / 45 m
 OR 6° decrease between sites 1 and 2, 5.4° decrease between sites 2 and 3,
 11.4° decrease between sites 1 and 3 – up to 2 marks
 OR Upstream is 17.2°, decreases to 11.2° and downstream is 5.8° = 2 marks
 OR Range of measurements: at site 1 between 15–19°, at site 2 between 9–13°, at site 3
 between 4–8°

Results do not support / partially support hypothesis = 0 (XHA)
 If no hypothesis conclusion ^HA & credit evidence

[3]

- (b) (i) Includes three different measurements
 Length alone may be out of proportion with other measurements / height or width may
 vary / where 2 pebbles with same length width may be larger in one of them / rock may
 have long length but short width [1]
- (ii) Callipers, ruler 2 @ 1 [2]
- (iii) Plot 101–200 = 4, 201–300 = 3, 301–400 = 1
 All correct = 2 marks
 1 or 2 correct = 1 mark [2]
- (iv) Load size increases from site 2 / 70 m to site 3 / 45 m OR site 2 has
 smallest average OR load size goes from large to small to large again
 Pebbles of all different sizes / big pebbles / small pebbles are found at
 each site
 Credit comparable data to 2 marks max
 e.g. average size at site 2 = 135.4 cm³ and average size at site 3 = 189.5 cm³
 e.g. 1 pebble of 401–500 cm³ in site 3 but 0 in site 2
 e.g. 0 pebbles of 301–400 cm³ in site 1, 1 in site 2, 3 in site 3 (any 2 stats)
 No hypothesis mark [3]
- (c) (i) Plot bars at 1.2 m = 80 cm³, 3.0 m = 165 cm³ 2 @ 1 [2]
- (ii) Largest pebbles are located furthest from inside bank / nearer to outside bank
 Volume / size of pebbles increases away from inside bank / towards outside bank [1]

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- (iii) Speed of flow / current varies across meander
Stronger current / more energy on outside of meander
More power to move larger rocks [2]

- (d) Measure more pebbles at each site across river
Measure at more / shorter distances across river / every 10 or 20 cm
Do more gradient measurements **and** calculate average
Investigate more than three sites
Get another student to check measurements / check / compare measurements in pairs / with partner / within group
Measure weight of rocks
Use a pebbleometer / measuring cylinder

Repeat the anomalous readings [4]

[Total 30 marks]

- 2 (a) (i) Well-kept vegetation which is regularly maintained
Vegetation is maintained but not to a high level
Vegetation is not maintained and is overgrown
Very little vegetation, land is derelict [1]
- (ii) Scores are subjective / personal opinion / students live in different types of area / students from different class backgrounds
Looking in different directions
Looking in different parts of the area [1]
- (iii) Different students or groups go to different areas
Agree on time of survey / all surveys done at same time / start and finish at same time
Use agreed categories / descriptions
Produce a recording sheet for survey / a survey sheet
Look at the area and decide the score
Calculate an average score from the individual student results [4]
- (b) (i) Building condition = 2
Public open space = 4
Traffic = 2
Noise = 3 [1]
- (ii) Plot Centre at 0.4 km = 8, Fant at 1 km = 9 Need names 2 @ 1 [2]
- (iii) Conclusion is **partly true** – 1 mark reserve (✓HA)
4 locations (or all 4 named) support hypothesis / match pattern
Shepway is the anomaly in the pattern
NB: All areas except Shepway support hypothesis = 2 marks

Credit paired data (distance and environmental quality score) to 2 marks max. Don't need name of area. For 2 marks need 1 supporting stat and 1 anomaly stat
e.g. (Tovil) score is 11 at 1.7 km and (Shepway) score is 7 at 3 km and – anomaly
e.g. (Tovil) score is 11 at 1.7 km and (Loose) score is 15 at 3.5 km – supports [4]

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- (c) (i) Advantages such as:
 No need to spend time asking people individually to complete questionnaire / work could be completed by one student
 Safer than approaching strangers in the street
 Overcomes problem of reluctance to approach people
 Can deliver leaflets more quickly than using questionnaire with people
 Gives the opportunity to get more responses than would be able to complete questionnaire on street / many people do it at same time
 Can use IT to total results / complete graphs
 People can complete questionnaire when they want / take their time / more time to answer / not feel pressurised
 People complete questionnaire without feeling they are being judged
 No bias in selection of people to do questionnaire
- Disadvantages such as:
 People may ignore leaflet or questionnaire / people may not return / complete questionnaire
 Still need to go out to put leaflets through doors
 People may complete questionnaire incorrectly / not take it seriously / may lie
 People may not be able to access on-line questionnaire / not IT literate / no internet / IT problem such as internet may not work
 May be completed by children / whole family together / anybody can answer it / no control over who answers it
 Cannot get advice while answering questionnaire / do not understand what to do
 Results are not instant / have to wait for results / delay in returning results
 2 + 2 [4]
- (ii) Completion of pie chart for Fant
 Unsafe = 20%, Very unsafe = 15%
 1 mark for dividing line at 85%, 1 mark for shading [2]
- (iii) Completion of divided bar graph for Fant
 People do not mix = 32%, People are unfriendly = 24%,
 People are hostile = 4%
 1 mark for dividing lines at 72 and 96%, 1 mark for shading [2]
- (iv) Tovil – 1 mark
- Fig. 10
 Highest percentage / amount / 95% feel safe or very safe
 Credit percentage if figure is correct
 OR more or most feel very safe or safe **than in other areas** / less or least feel unsafe or very unsafe **than in other areas**
- Fig. 11
 Highest percentage / amount / 39% care for other people
 Credit percentage if figure is correct
 OR most or more care for / are friendly to other people **than in other areas** / least or less says people are hostile **than in other areas** [3]

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(v) Evidence may be statistics or comparison of areas

Fig. 10 / Table 5

More / larger percentage of people feel unsafe / very unsafe in Shepway than Centre (Need comparison & 2 named areas. Do not need distance from CBD)

OR 26% feel very unsafe in Shepway and 18% feel very unsafe in Centre (Need stats from 2 named areas. Do not need distance from CBD)

OR Shepway has highest / percentage / most / 26% who feel very unsafe and is one of the furthest sites out from the CBD (Need 1 named area and reference to distance and percentage)

Fig. 11 / Table 6

More / larger percentage of people do not mix at Loose than Fant (Need comparison and 2 named areas. Do not need distance from CBD)

OR 41% do not mix in Loose and 32% do not mix in Fant (Need stats from 2 named areas. Do not need distance from CBD)

OR Tovil has highest percentage / most / 39% of people who care for others and it's not the furthest out from the CBD (Need 1 named area and reference to distance and percentage)

Table 7

More / larger percentage of people have been victims of theft in Shepway than Centre (Need comparison and 2 named areas. Do not need distance from CBD)

OR 24% have been victims of theft in Shepway and 18% have been victims of robbery in Centre (Need stats from 2 named areas. Do not need distance from CBD)

Shepway has highest percentage / most / 39% vandalism and it's one of the sites furthest from the CBD (Need 1 named area and reference to distance and percentage)

No hypothesis mark

3 @ 1

[3]

(d) Taken photographs of the different areas

Used secondary data, e.g., crime statistics / internet / statistics from police

Interviewed residents to find out their reasons for living in different areas / ask people / ask questions

Interview police officer / councillor

Participant observation / live in the area

Physical collection of data such as measure the amount of noise / atmospheric pollution

[3]

[Total 30 marks]