

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

**MARK SCHEME for the October/November 2009 question paper
for the guidance of teachers**

0460 GEOGRAPHY

0460/04

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) For veg. cover and height need reference to use of equipment and/or what it does for first mark. Any 4 points below; no reserves.

Examples

Sample points are 1 metre apart/equidistant/systematic (1)

Vegetation cover

Tape used to measure width of path (1) by laying across 10 metre transect (1)

Quadrat used to measure area of veg/cover/bare ground (1).

Calculate percentage of veg/bare ground by counting squares (1)

Vegetation height

Ruler used to measure height of vegetation at each sample point (1)

Take a number of measurements and calculate average (1)

$4 \times 1 = (4)$ [4]

- (ii) Completion of kite diagram.

Tick P for each plot. Tick S for shading.

$2P + 1S = (3)$ [3]

- (iii) Completion of bar graph. Plot 4, 5, 12, 17. Tick P twice.

4 correct = 2 marks, 2 or 3 correct = 1 mark Shading/1 correct = 0 [2]

- (iv) Hypothesis is true – tick H (1) OR erosion **does** decrease away from centre of footpath. If write hypothesis must change wording of that given. Allow a tick D mark for ref. to any pair of data in evidence.

Evidence: More bare ground in centre. (1)

Vegetation increases in height away from centre (1)

No veg. at site 6 in the centre but heights of 14 cm and 11 cm at sites 1 and 11 away from centre (1 + 1D)

$1H + 2 = (3)$ [3]

- (b) (i) Must refer to three different pieces of equipment from diagram and what is done with each.

Examples

Push or hammer drainpipe/tube into ground (1)

Pour a set/measured amount of water from bottle/jug into pipe/tube (Water 1 max.)

Use stopwatch/watch to time how long it takes for the water to soak into ground (1)

$3 \times 1 = (3)$ [3]

- (ii) Completion of line graph. Plot 48, 30, 38. Tick P twice. Plots need not be squares; part of plot must be on the centre square above the relevant number.

3 correct plots + complete line = 2, 1 or 2 correct plots + complete line = 1.

3 correct plots but no complete line = 1 max.

$2 \times 1 = (2)$ [2]

- (iii) More bare ground equals **longer/slower/higher/more** infiltration time

OR reverse. [1]

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(iv) Focus on impact of people walking**Examples**

More people walking/trampling (1)

Soil becomes compacted/pressed down/hard (1)

More bare ground/less vegetation in centre due to people walking (1)

 3×1 or $(1 + 1) + 1 = (3)$

[3]

- (c) Can refer to B and C in general or separately. Reserve 1 for H and W. Marks are for
- HOW
- and
- WHY
- (Tick H and tick W; max. 2 for each). Can match H/W any way.

Examples

HOW B and/or C different	WHY results differ
Vegetation could be taller (1)	Because less walkers (1)
More veg. cover/less bare ground (1)	Because further from car park (1)
Woodland path may be narrower (1)	Because trees restrict width for walkers (1)
Greater compaction/erosion (1)	Because walkers concentrated (1)
Less compaction/erosion (1)	Too far to walk to from car park (1)

 $2H + 1W$ or $1H + 2W = (3)$

[3]

- (d)
- Pedestrian count
- to find out number of walkers.

Questionnaire to find out why people came to the area/frequency of visiting/when they came. If "destination" must refer to place within the map area.Different times of year to see if results were affected by different weather/seasons/holiday patterns $3 \times 1 = (3)$

[3]

- (e)
- First list OK with no qualification/elaboration**
- . Ideas such as:

Restoration of footpath/create permanent paths (1)

Create alternative/signposted paths (1)

Improve drainage (1)

Fence off areas/restrict access (1)

Re-seed area around footpath/allow area to recover (1)

Information and education centres (1)

Build small/low bridges (1)

Create nature reserves (1)

List below needs qualification/elaboration. Ideas such as:Rules about how to behave/charges for car parking/fines for misdemeanours (1)Use rangers to manage where visitors go/the environment (1)More bins to reduce littering (1)Education about the environment (1)**[Total: 30]**

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- 2 (a) 1 mark for each street i.e. correct plot and direction = 1. If plots not labelled O5 and R5 no marks. Tick or x.

Direction – allow within middle 30 degrees for SW and NE.

Plot – R5 must be on 2 km line; allow 4.5 or 4.6 km for O5 plot.

$2 \times 1 = (2)$

[2]

- (b) (i)

Clear road with light parking
Traffic moving freely, light parking
Traffic moving freely, heavy parking
Traffic congested, not moving freely

All correct for mark. Tick or x.

[1]

- (ii) Ticks and/or x.

BEST = e.g. intermediate level of noise
WORST = e.g. High/loud/very noisy

Or similar descriptions. Look for a “step-up” in noise as go down the table.

$2 \times 1 = (2)$

[2]

- (iii) Do not allow what they have already done e.g. chosen sites/area of town to survey; prepared an env. survey sheet.

Examples

Whether to survey individually or in a group/pairs (1)

How much time was available to do surveys (1)

When would be best to do the surveys (1)

Subjective nature of survey (1)

Whether to base survey on whole street or measured section (1)

Ground floor only/all floors land-use (1)

How to identifying main land use (1)

Safety refs (1 max.)

$4 \times 1 = (4)$

[4]

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- (c) Question is about designing a sheet that would work NOT fill in a sheet with one street's imaginary results. If do latter allow max. 1 for Category mark below.

Tick C for land-use categories; must have min. of three from list below.

Tick S for a scoring system that relates to 0–3

Tick T for ref. to totalling the env. scores.

Environmental Quality Survey

(Name of Street

Litter	3	2	1	0
Roads and pavements	3	2	1	0
Trees, shrubs, grass verges	3	2	1	0
Street furniture	3	2	1	0
Road signs	3	2	1	0
Traffic	3	2	1	0
Noise	3	2	1	0

Total environmental quality score

$$3 \times 1 = (3) \quad [3]$$

- (d) (i) Plotting on dispersion graph. Plot 8 and 17 (two ticks P) plus circling Median of 15 Tick M.

$$2P + 1M = (3) \quad [3]$$

- (ii) Shopping, Residential, Open space, Industrial. All correct for mark [1]

- (iii) **Agree with Hypothesis** Tick H or Main land use does affect the quality of environment. Need it stating in different words for latter.

Evidence: Different land-uses have different env. scores (1)

Median scores are different for different land-uses (1)

Shopping has higher env. score than industry which is lowest (1)

$$2 \times 1 = (2) \quad [2]$$

- (iv) No need to compare.

Shopping areas have higher environmental score because:

Better looked after, jobs to improve environment

Need to attract customers, therefore needs to be attractive

May be newer or re-developed areas

Industrial areas have lower environmental score because:

Noise from heavy machinery/heavy lorries accessing/leaving area

Air pollution from factory

Old sites, maybe semi-derelict

$$3 \times 1 = (3) \quad [3]$$

- (e) (i) Plotting on scatter graph. 1.4/8; 2/12; 4.4/17

$$3 \times 1 = (3) \quad [3]$$

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- (ii) No marks for accepting/rejecting H. Marks for evidence supporting either.
Credit data mark tick D if refer to two distances/env. scores.

Agree with the hypothesis that it does vary because there is a range of environmental scores with high scores both close and far away from the centre and lower scores between.

Disagree: because there is no clear overall pattern that environmental quality is affected by distance from the town centre

$2 \times 1 = (2)$

[2]

- (f) Reserve of 1 mark in each.

Environmental quality reference sheet:

Descriptions are vague (e.g. small amount of litter and much litter. No noise)

Not all subject categories apply to each street (e.g. Open space street may have no street furniture)

Individuals will score the same street differently because survey is subjective

New categories needed e.g. type of pollution.

Four land use categories:

Most streets contain a mixture of different land uses

Land use categories are wide (e.g. residential, open space)

Not enough categories/more land-uses/not varied enough

Open space may be farmland or derelict land or

Industrial may be a modern distribution site or 19th century factory

No commercial/offices

No schools/leisure centres/ other specific uses/"Others" (1 max)

$3 + 1$ or $2 + 2 = (4)$

[4]

[Total: 30]