

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

MARK SCHEME for the May/June 2012 question paper
for the guidance of teachers

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.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

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- 1 (a) (i) Hold the tape measure/it at the other end of transect line
Measure from tape/transect line to ground
Record results/read results off ruler/read measurements
Measure 50 cm interval across tape [3]
- (ii) Diagram includes:
Frame of quadrat
Internal squares of quadrat 5×5 , 6×6 , 10×10 (any equal number)
75/25 split
Labels include:
Quadrat/frame
Internal squares
Vegetation (75%) and bare soil (25%)
1 mark max for labelling

Need square outline to consider answer (no pie chart/triangle/sketch) [4]
- (b) (i) Cross-section completion – plots and line
2.5 m = 36 cm
3 m = 30 cm
1 mark for both plots, 1 mark for line [2]
- (ii) Grassland cross-section Woodland cross-section
Wider/greater distance **across footpath** Narrower/less distance **across footpath**
Gentler slopes/sides Steeper slopes/sides
Less deep Deeper

Need comparison

Accept paired figures if used in comparison: woodland = **only** 5 m wide and grassland = 8 m wide
Woodland = 36 cm deep and grassland = **only** 14 cm deep

NOT:
Lower
More constant slope in grassland

3 @ 1 [3]
- (iii) Hypothesis is correct/agree/footpath erosion does increase towards centre – 1 mark reserve
If say disagree = 0

Path/paths is deep in centre/2.5 m in woodland path/4 m in grassland path

Accept figures such as
Woodland path in centre/2.5 m across = 36 cm
Grassland path in centre/4 m across = 14 cm [2]
- (c) (i) Kite diagram completion – 2 marks for plots, 1 mark for correct shading
7.5 m = 90%
8 m = 96% [3]

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- (ii) Credit paired figures of centre and edge of paths (up to 2 marks)
 Must specify **which path**
 Woodland: centre/2.5 m = 0%, edge/0 m/5 m = 82/80%/around 80%
 Grassland: centre/4 m = 40%, edge/0/8 m = 93/96 %/more than 90%

2 @ 1

[2]

- (iii) Grassland path is on gentle slope/woodland path is on steep slope (1)
So easy to walk on/**so** hard footsteps/lots of force (1)

Grassland path is wide/Woodland path is narrow (1)

So walkers will spread out more OR more even erosion/more even trampling of vegetation (1)

So less opportunity for walkers to spread out OR more concentrated erosion/more concentrated trampling of vegetation (1)

Viewpoint attracts **more** walkers/bridge or river attracts **fewer** walkers (1)

So more people on woodland path/so less people on grassland path (1)

Must specify which path is being described

No double credit for opposites

NOT:

Grass protects soil more than woodland

Roots hold soil together

Difference in soil moisture

Paths are different lengths

[4]

- (d) Drainpipe/pipe/tube
 Knocked/pushed **into** ground
 Measured amount of water/equal amount of water
 Poured into tube
 Stopwatch/timer
 To measure time for water to soak into ground
 Repeat and calculate average

1 mark max for equipment (pipe/stopwatch)

NOT:

Water poured onto ground

Pipe put on ground

Hammer

Soil put into container

[3]

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- (e) Ideas such as:
- Create permanent path/tarmac path/rocks in path/bricks/tiles/steps to go uphill
 - Restore eroded footpaths/fill in hole
 - Alternative/signposted paths/more paths
 - Improve drainage
 - Re-seeding around footpath/more grass around path
 - Prohibit use/allow treated paths time to recover/restrict access times / 'keep off' signs
 - Small/low bridges/boardwalks/walkways
 - Education about/raise awareness of footpath erosion

NOT:

- Widen footpath
- More vegetation around path
- Plant trees for roots to stabilise soil
- Netting
- Zip line
- Level off ground
- Fence off sides of path
- Don't walk on same path

[4]

[Total: 30 marks]

- 2 (a) (i) Stratified sampling/reflect population
Appropriate gender balance/age balance/avoid bias/mix of age/gender

Systematic sampling/e.g. asking every tenth person
Quick/avoids bias

Random sampling/e.g. ask the next person they meet/random numbers
No selection criteria/quick/random numbers avoids bias

Credit 1 mark for named sampling method or description

[2]

- (ii) 15 -30 ✓ and 31- 60 ✓
BUT: 15 – 40 ✓ and 40 – 60 ×
16 – 20 × and 40 – 60 ×
Accept reasonable age ranges

2 @ 1

[2]

- (iii) All ticks in correct boxes on Fig. 4

Top
Top
Middle
2
4 or more

[1]

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- (iv) River/stream/lake
Water tank/**collect** rainwater
Road tanker/water truck
Well/pump
Bottled water

NOT:

From sea
Buy water from shop
Recycled water
Fountain

2 @ 1

[2]

- (v) May be obtaining electricity supply illegally/may be reported
Shame of not having electricity/not want to admit

NOT:

Don't know where electricity comes from

[1]

- (b) (i) Divided bar graph completion – 2 marks for divisions at 18 and 90
1 mark for correct shading/labelling
If not drawn in correct order go to 2 marks max
If lines at 10, 18 and 72 go to 1 mark

[3]

- (ii) Bar graph completion 80% city authority & 18% cable
No mark for shading

2 @ 1

[2]

- (iii) Yes/results support hypothesis/hypothesis is correct/services are better in squatter settlement A – 1 mark reserve
If say No = 0

Need comparison – more or paired figures

1 comparison from each of tables 2, 3 and 4

In settlement A:

More taps in the home OR have own water supply/72% in A and 5% in B

Less have to use standpipe/18% in A and 38% in B

More toilets in the home OR have own toilet/51% in A and 0% in B

Less have to use public toilet/49% in A and 100% in B

More have legal electricity supply/from city authority/80% in A and 17% in B

Less have to obtain electricity supply illegally/attaching a cable/18% in A and 47% in B

Less have no electricity supply/2% in A and 36% in B

Accept opposites in settlement B, but no double credit.

[4]

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- (c) (i) Pie graph completion – 1 mark for division, 1 mark for shading
 1 room = 64%
 2 rooms = 30%
- NOT:
 2 rooms first, but still credit shading if it matches correct percentage figures [2]
- (ii) 1
 Larger
- 2 @ 1 [2]
- (iii) Completion of pie graph key – shading 4 categories
 All pairs correct = 2 marks, 2 or 3 correct = 1 mark, 1 correct = 0 marks
 Shading is same order as settlement A in Fig. 8
 1 person
 2 people
 3 people
 4 or more people
- 1 mark max if don't include 'people'
 1 mark max if order of key is incorrect [2]
- (iv) In settlement B
 There are more/larger % of homes with 4 or more people
 There are less/smaller % of homes with 1/2/3 people
 Can score both marks for statements
 Accept opposites in settlement A, but no double credit.
- 4 or more: 86% in B and 62% in A
 3: 10% in B and 20% in A
 2: 3% in B and 12% in A
 1: 1% in B and 6% in A
- Need both figures for credit
 Can score both marks for paired stats
- Allow 1 mark for **similarity** between settlements, such as majority/60% of homes have four or more people living in them
- NOT:
 More in homes in settlement B
 Crowded [2]
- (v) No/results do not support hypothesis/hypothesis is incorrect/less crowded in A – 1 mark reserve
 If say Yes = 0
- There are **more rooms** per house in A and **less people** per house in A
 There are **fewer rooms** per house in B and **more people** per house in B
 Allow cross-reference between these two lines
 No credit for % figures without interpretation e.g. only [2]

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- (d) Safety of students/mugging/theft/crime/dangerous place
Hassle
People being reluctant to answer questions/won't answer truthfully/may lie/rude/embarrassed to give correct answer
Getting lost/difficult to get to/poor transport links
Not finding enough people to make the survey accurate
Language difficulties for people to understand the survey
Polluted water/air/rubbish/unhygienic conditions/student illness/disease
Busy streets make it difficult to interview people

3 @ 1

[3]

[Total: 30 marks]