**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

**International General Certificate of Secondary Education**

# MARK SCHEME for the October/November 2

# 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.

Cambridge is publishing the mark schemes for the October/November 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

**1 (a) (i)** Examples
Accessibility/reachable/easy to get to/is it private land (1)
Distance from source/between sites (1)
Away from human impact/buildings/houses (1)
Depth/width of water/might flood (1)
Velocity/fast flowing/strength of current (1)
Safety ref wild/dangerous animals (1)
Not near waterfalls/rapids (1)

**(ii)** To ensure consistency/fairness of results (1)
Velocity/depth/width/river conditions may change (1)
Weather/rainfall might change/on same day should stay the same (1) **[1]**

**(iii)** Examples
Agree methodology on what measurements to take (1)
Find out what does not work/change it/reduce errors (1)
Practise fieldwork techniques/get experience/get idea what to do (1)
Test/learn how to use equipment (1)
Experience of working as a team (1)
Find out how long it would take (1) **[2 × 1 = 2]**

**(b) (i)** Answers to focus on the diagram.
Poles/sticks put on each bank of the river (1)
String/ropes stretched between the poles/sticks across the river (1)
Measure a fixed/given distance along river/measure 10m (1)
Students at each end of the fixed distance (1)
Float/floating object put in the river (1)
Measure time float takes to travel distance (1)
Repeat across river/in 3 channels (1) **[3 × 1 = 3]**

**(ii)** Put flow meter below surface of river/submerge it (1)
Propeller must be facing upstream (1)
Hold in water for sensible/specified time (1)
Record reading/read the meter (1)
Take several readings (1)
Calculate average (1) **[3 × 1 = 3]**

**(iii)** Completion of line graph sites 4 (7.8 and 0.60) & 5 (10.5 and 0.78)
1 mark for each correct plot = 2 marks; no marks for lines.
No need to put 4 and 5 by plots **[1 + 1 = 2]**

**(iv)** Hypothesis is TRUE
Overall velocity increases 0.36 to 0.78 so does distance from source 1.8 to 10.5 (1)
Overall velocity increases 0.36 to 0.78 as distance increases from Site 1–5 (1)
No mark for ref to anomaly at 4; answer must support True judgement.

**OR** Hypothesis PARTLY TRUE
Because of an anomaly at Site 4 where velocity decreases (1)
Because from Site 3 to Site 4 velocity drops/reduces (1) OR from 0.62 to 0.6 (1)
**[1HA + 1 = 2]**

**(c) (i)** 1 mark each for one piece of relevant equipment and 1 measurements. Can get method mark even if equipment

**Width of channel:**
Equipment: tape measure/tape/metre rule (1 Reserve)

How: Stretch tape measure across river (1)
Stretch rope across river then measure it (1)

**Depth of river:**
Equipment: ruler/measuring stick/string & stone/ranging pole/stick & ruler (1 Reserve)

How: Measure depth at intervals (1)
Rest ruler upright (1)
Must touch river bed (1)
Measure up to where the water is wet (1) **[2 × (1R + 1) = 4]**

**(ii)** 0.22 **[1]**

**(iii)** 2.54 (Accept 2.542) **[1]**

**(iv)** Examples
River is deep (1)
Fast-flowing/strong current (1)
Current may pull tape downstream (1)
Tape may not be long enough (1)
Dangerous with a reason not already credited above (1 max) **[1 + 1 = 2]**

**(d) (i)** Plot site 5 on scatter graph (0.78 Av Vel/0.50 HR).
(No need for 5) **[1]**

**(ii)** Need two pieces of evidence (No need for units)
Velocity increases from 0.36 to 0.78 and Hydraulic radius increases (1) from 0.05 to 0.5/from Site 1–5 (1)
Hydraulic radius increases from 0.05 to 0.5 and velocity increases (1) from 0.36 to 0.78/from site 1–5 (1).
Can use any two sites that support the hypothesis **[1 + 1 = 2]**

**(e)** Examples of different recording techniques for the **VALLEY**
Could be across the valley or down the long profile.
Measure/look at cross-profile/slopes/gradient/width of valley(s) (1)
Sketches of five sites (1)
Annotations/labels on sketch/drawings (1)
Photographs of five sites (1)
Describe changes/differences in vegetation in the valley (1)
Describe changes/differences in human impact on the valley (1)

Credit up to 3 marks if elaborate on 1 technique **[(3 × 1) or (1 × 2) + 1]** or **[1 + 1 + 1 = 3]**

**[Total: 30]**

**2 (a)** Examples
Historic growth from centre outwards/planning policy (1)
Physical features with e.g. river valley/flat land/coasts. (1)
Human features with e.g. railways/roads/accessibility (1)
Value of land/price/cost (1)
Natural resources with e.g. coal/minerals (1)
Conflicting land uses with e.g. housing away from industry (1)
Linked land-uses with e.g. low-cost housing close to workplac
High-class residential away from centre/CBD as was more sp

**(b) (i)** Examples
Tall/multi-storey buildings/high land values (1)
Focus of roads/railways/bus stations/railway stations/accessible from other areas (1)
Car parks (1)
Banks/offices (1)
Large shops/department stores/chain stores/shopping centres (1)
Pedestrianised area/lots of pedestrians/crowded (1)
Historic/religious buildings (1)
Public buildings/city hall/government buildings (1)
Hotels (1)
Air/noise pollution (1)
Traffic congestion/rush hours/busy roads (1)
Market place (1) **[1 + 1 + 1 = 3]**

**(ii)** One mark for type; one for description
**Systematic** sample (1)
e.g. every 100m/regular/equal/specific (1)

**Random** sample (1)
e.g. pick sites off a map/pick any site (1)
use random numbers/tables to select sites (1) **[1 + 1 = 2]**

**(c) (i)** Residential = 6
Offices = 2
Shops = 2
1 or 2 correct = 1; 3 correct = 2 **[1 + 1 = 2]**

**(ii)** Completion of divided bar graph: order 217 from left OR 217 from right
Dividing lines = 1 mark (To be annotated beneath the plots)
Shading = 1 mark (To be annotated by the key) **[1 + 1 = 2]**

**(iii)** **Agree:**
Simple data to plot (1)
Easier to compare/analyse (1)
Map will be too cluttered with graphs (1)
Gives a clear picture (1)
Quicker/faster to present/draw/map/record/show (1)

**Disagree:**
Loses detail of different types of building (1)
May be fairly even split of land use/hard to choose main use (1)

Credit either agree or disagree statements. If do both credit first **[1 + 1 = 2]**

**(iv)** Credit 1 max for each of four different land-uses in key.

Residential areas are near waterfront/on edge of urban west/south/east/west (1)
Office area is in the centre of city/in or near CBD/near do
Shops area is along transect B/south of CBD (1)
Industrial areas are near docks/close to motorway/along CBD (1)

**(d) (i)** Examples
Easier/quicker to count number of storeys (1)
Difficult to measure actual height of tall buildings (1)
Can measure ground floor height and multiply by storeys (1) **[1]**

**(ii)** Completion of sites 3 & 4 on transect C
10 Offices at 3; 4 Industry at 4.
1 mark for each bar correct with correct shading **[1 + 1 = 2]**

**(iii)** Hypothesis is TRUE/CORRECT

Evidence:
More storeys/>10 storeys for offices OR more storeys/>4 for shops (1)
Fewer storeys/<3 storeys for residential OR less storeys/<4 storeys for industry (1)
More storeys in offices/shops than residential/industry (1) **[1R + 1 + 1 = 3]**

**(iv)** Examples
Buildings are built higher where land values are high/relates to land value (1)
Buildings are higher where there is less space/relates to space (1) **[1R + 1 + 1 = 3]**

**(v)** Ground floor use is often different from upper floors OR example e.g. might get flats above shops (1) **[1]**

**(e)** Example: Accept max of 2 different topics with 1 elaboration of technique on each OR 1 topic with 3 good follow-up points about technique.

Topic: e.g. Environmental quality survey/litter/air pollution/noise pollution/vegetation survey. (1 Reserve/2 max for valid topics)

Techniques
e.g. Choose different areas of city, e.g. industrial, residential, retail, open space (1)
Carry out questionnaires (1)
Interview people (1)
Carry out bi-polar survey (1)
Internet research must be qualified with a relevant aspect of the topic (1)
**[(1 + 3) or 2 × (1 + 1) = 4]**

**[Total: 30]**