CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2014 series

0460 GEOGRAPHY

0460/43 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 2014 series for most Cambridge IGCSE®, Cambridge International A and AS Level components and some Cambridge O Level components.
1 (a) Method 1:
Measure length of river (10 m)/divide into sections/ranging poles to mark out section/set up start and finishing points
Put orange/dog biscuit/float/ floating object into river
Time float moving over distance
Repeat and calculate average/repeat across river channel
Calculate velocity by dividing distance by time

Method 2:
Put velocity meter/propeller/it below surface of river/ in/ into river/ in/ into the water
Propeller must be facing upstream/nothing in front of propeller
Read/ look at digital/ velocity reading/ display / speed is shown on display
Take several readings over time and calculate average/take readings across river channel and calculate average

If answers are wrong way only round credit relevant point about repeat and calculate average
Reserve 2 marks for each method [6]

(b) (i) Floats got stuck in channel/ hit objects/ vegetation in channel
Operator error/ error in calculation
Measurements not easy to take at different points across river/ float doesn’t move in straight line
Floats affected by wind
Only measures surface velocity

3 @ 1 [3]

(ii) Completion of Group A line graph at points 3 (1.1 m/s) and 4 (1.6 m/s)
Look at 2 plots and completed line
–1 for each error (wrong plot(s)/ incomplete line) [2]

(iii) Hypothesis is true/ velocity does increase downstream – 1 mark reserve
1 mark for average velocity data from two sites from group B e.g. site 1 = 0.7
and site 4 = 1.7; site 2 = 0.8 and site 3 = 1.2
Overall/downstream/over the 4 sites from 0.7 to 1.7 [2]
(c) (i) Size: used a ruler to measure long axis/length of pebble
    Roundness: used information from the chart/compared pebble with the chart
    
(ii) Rocks selected may not be typical of the rocks at that site/anomaly
    All rocks may have been taken from same area of river bed/not across
    channel/taken from same place
    Not a fair/reliable sample/students choose rock/bias
    
(iii) Plot two bars on graph: average length of long axis = 15.4 cm
    average roundness score = 3.9
    
(iv) Average length of long axis at site 1 = 5.0 at site 3 =9.7
    Average length of long axis at site 1 = 5.0 at site 4 = 9.3
    Accept reference to any 2 sites and lengths
    
    Average roundness score almost the same/similar for all sites + data from
    any 2 sites OR
    Accept reference to any 2 sites and roundness scores which show decrease
    in roundness i.e. NOT sites 1 and 2 or sites 3 and 4 in combination
    Roundness score at site 1 = 4.5 at site 4 = 4.3
    Roundness score at site 2 = 4.6 at site 3 = 3.6
    
    1 mark for length and 1 mark for roundness
    Allow tolerance of 0.1 on all measurements from Group A
    
    No hypothesis mark
    
(d) (i) Eroded by water
    Attrition/pebbles crash into each other/river bed/bank
    Corrosion/solution/dissolves rocks
    Smaller/rounder pebbles are moved further downstream because they are
    easier/lighter to transport
    
(ii) Repeat measurement(s) to check accuracy/other student measures to check
    accuracy
    Sample/measure more pebbles at each site/take more measurements at
    each site
    Use callipers/pebbleometer/measure weight or volume of pebbles
    Systematic sampling technique/sample rocks from inside, middle and
    outside
    Test at more sites
(e) Select/find more fieldwork sites downstream/along the river

Stretch measuring tape/rope across channel/from one bank to the other
Record measurement of width (in metres)

Rest rule/ruler/ranging pole on river bed/lower rock on string to river bed
Make sure ruler is upright/vertical/make sure string is taut
Measure depth at regular intervals across channel (every metre)
Read off the scale where water level reaches/where ruler is wet
Record measurement of depth (in cm/metres)

Only credit 1 mark for recording measurement

[4]

[Total: 30]
2 (a) 1 mark for name of sampling method – it must link to description (or credit just name or description)

Random sampling:
Ask the next person they meet/ask any person/pick the first person/no pattern in choosing people
Use random number table to generate an order to ask people

Systematic sampling:
Ask people at regular intervals/regular pattern
Ask every tenth person they meet

Stratified/Quota sampling:
Ask people from different age groups/male and female/different socio-economic groups
Get a proportionate number from each age group/gender/socio-economic group

(b) (i) Completion of pie chart – 31 to 40 = 26% and more than 40 = 10%
1 mark for line, 1 mark for shading

(ii) Most people have lived in the village for more than 20 years

(iii) Completion of divided bar graph
Nearby towns = 25%, local villages = 15%, always lived in village = 16%
2 marks for dividing lines at 69 and 84 (if 69 is incorrect, add 15 for second line placement)
1 mark for shading – must be in correct order
–1 mark if segments are correct size but wrong order

(iv) Hypothesis is false/incorrect/no – 1 mark reserve

Most/more people came from more than 10 km away/less than half came from less from than 10 km away
40% or 40/84 or 48% came from less than 10 km/44/84 or 52% came from more than 10 km away

Hypothesis conclusion is correct/true/partially true = 0

(v) 1. Born in the village
2. Surrounded by attractive scenery
3. Easy access to work in the nearby town

(vi) Hypothesis is true/correct – 1 mark reserve

More than half/53% live in the village because of work
38% work in (nearby) town and 15% work in the village

Hypothesis conclusion is incorrect/not true/partially true = 0
(c)  
(i) Data collected from another source / not collected yourself / second hand data / published data / already available  
(ii) Book / map / newspaper / internet / web site / data table / document such as birth records  
(iii) Line / bar graph  
(iv) Plot two bars  
\[
1961–1971 = -5.4\%, \quad 2001–2011 = +34.2\% 
\]
Ignore shading  
(v) Local people:  
Crime / anti-social behaviour  
Traffic congestion / lots of traffic / danger from traffic  
Rise in house prices / expensive house prices / unable to buy a house locally / not enough houses  
Traffic noise / noisy residents  
Decrease in community spirit  
Pressure on community facilities / schools / surgery etc.  

Local environment:  
Destruction of fields / vegetation / forests / farmland  
Loss of habitats / reduction in wildlife  
Air pollution  
Pollution of rivers / water pollution  
Noise scaring animals  
Litter eaten by animals  

(d) Get a new map  
Compare land use in 2011 / present-day village / present-day map with 1970 map  
Identify changes in building or land use / e.g. shop or post office to housing  
Plot new houses / shops / new buildings / roads on the map  
Label / classify / colour-code different types of land use or old and new buildings / overlay new map on old map  
Photos of new developments  

[Total: 30]