CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2013 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.

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 May/June 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

1 (a) (i) Factors such as:
Safety
Width / depth / amount of water – not too wide / not too d
Accessibility / private land / environmentally sensitive are
Distance between sites / equidistant from other sites / ev
together
Away from human impact / polluted water

(ii) Agree methodology on what measurements to take faults
improve methodology
Practise fieldwork techniques / know what to do
Test equipment 2 @ 1 [2]

(b) Width of channel:
Equipment: tape measure

Stretch tape measure across river / from bank to bank /
One side of river to the other (1 + 1)
Depth of river:
Equipment: ruler / metre stick / measuring stick / metre rule
(1 + 1)

1 mark for equipment & 1 mark for method for both measurements [4]

(c) (i) Completion of cross-section:
2 accurate plots + line = 2 marks
2 accurate plots but no line = 1 mark
1 accurate plot + line = 1 mark
Ignore shading and line to 0 [2]

(ii) Use a tape measure / rope / chain
Work across river bed from water level on one side to water level on other side
Keep tape in contact with bed / channel
OR
Measure wetted perimeter line on cross-section
Use scale [2]

(iii) Gradient / steepness of slope /angle of slope
Volume of water / discharge / tributary joins
Straight / presence of meanders
Amount of rainfall / snowmelt
Interference by people, e.g. dam / weir
Bed roughness / rocks in river / plants in river

(iv) Hypothesis is generally / partially true / true / Yes / do inc
But not true for width / only true for wetted perimeter & d
Site 5 is an anomaly in width / site 4 is wider than site 5 / site 5 is narrower than site 4
Credit paired data to 2 max.
Need 2 sites + 2 measurements
e.g. depth at site 1 is 0.04(m) & at site 5 is 0.27(m)
w.p at site 1 is 1.75 & at site 2 is 6.3
Width at site 4 is 10.6 & at site 5 is 9.9
If false = 0 [4]

(d) (i) Rock size: use ruler to measure long axis / length / width / height of rock
Roundness: compare rock with chart (1 + 1) [2]

(ii) Plotting two bars on graph
Size = 22.5, roundness = 2.1
Ignore shading 2 @ 1 [2]

(iii) Hypothesis 2 is correct rocks do become … [1]

(iv) Attrition / pebbles crash into each other
Corrasion / pebbles crash into bed and banks
Smaller / rounder pebbles are moved further downstream because they are easier to transport
Longer duration of transport [2]

(e) Measure depth at more points across channel / smaller intervals
Measure at more sites / smaller intervals
Repeat during different day / month / season
Sample more rocks at each site
Different sampling techniques rather than random
Get rocks from underneath surface of bed
More students use Roundness Scoring chart to check results
Measure volume / weight of rocks 4 @ 1 [4]

[Total: 30]

2 (a) (i) Tertiary

(ii) Completion of pie chart – service industries & mining
1 mark for shading, 1 mark for correct position of line

(b) (i) Systematic sampling
Ask every tenth person
Avoid bias / fair test / equal chance for everybody

OR
Random sampling
Use random numbers / ask next person they meet / no order

OR:
Stratified
Ask appropriate age / gender balance
Avoids bias / fair test / more representative

Credit 3 answers separately 3 @ 1 [3]

(ii) Students only want to ask residents or locals / not ask visitors / students want to know if someone is a resident or live there
Residents or locals will know about the mine / visitors won't know about mine
Not waste people's time [2]

(iii) Completion of bar graphs – town has more services = 25
dust in the air = 17 2 @ 1 [2]

(iv) Hypothesis is false – 1 mark reserve
Mine has a positive impact
Most / almost all / over half / majority of people say mining is good

Reference to named benefits from mining, with supporting data to
1 mark max e.g. 40 said there are jobs at the mine [4]

(v) Divert mining lorries around town
Construction of railway to mine
More buses for workers
More roads / wider roads / by-pass road
Limit times of blasting
Sound-proof building / double glazing
Drilling / digging for rock / mining underground
Announce when blasting is happening
Noise barriers
Wear ear muffs
Dust controlled by water sprays
Wears masks 3 @ 1 [3]

(c) (i) Completion of lines on flow line map
Orapa = 5, Francistown = 1
Needs to be same width along all arrow 2 @ 1 [2]

(ii) 1 max per idea below

Grouping: Clustered / grouped / widespread / scattered

Direction: Comment e.g. towns are mainly in south of country / towns are NE of mine / none from north Botswana

Distance: Comment e.g. close to mine / different distances from mine

All in **Botswana** / none from other countries / none from Zimbabwe / many close to borders

Data: e.g. 8 towns in NE, all within 500km of mine 3 @ 1 [3]

(iii) Show **direction** of movement
Shows **number** of people / how many there are
Easy to interpret / clear picture / can easily see pattern [2]

(iv) Working in a mine is better paid than jobs in my home town
Send money to my family back home
There are no jobs in my home town

If make 4 choices deduct one mark 3 @ 1 [3]

(d) Must leave their family / work away from their family / away from home
Poor working conditions / long working hours / dirty job / hot in mine
Dangerous work / mine collapse
Dust causing health problems / breathing difficulties
Noise causes hearing problems
Vibrations cause 'shakes'
Boring work / lifestyle
Low wages / poorly paid / exploitation
Heavy / manual work 3 @ 1 [3]

[Total: 30]