UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2010 question paper for the guidance of teachers

0460 GEOGRAPHY

0460/41 Paper 4 (Alternative to Coursework), maximum raw mark 60

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UNIVERSITY of CAMBRIDGE
International Examinations

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	IGCSE – October/November 2010	0460	41

1 (a) (i) 3 [1]

(ii) 4 (accept tally or total) [1]

(iii) 20 [1]

(b) (i) Such shops are used by local residents and tourists.
Result would depend on when students did the survey.
How would the students distinguish between local residents and tourists. [2]

(ii) Survey / ask shop owners.
What is the balance between residents and tourists / is the shop used by residents or tourists.
Survey / ask the customers where they come from / are they tourists. [2]

(iii) 1 mark for plotting line accurately.
1 mark for shading (order doesn't matter). [2]

(iv) Yes, agree with hypothesis ✓Ha
More than half the shops / 55% / 22 shops / higher percentage / most are used mainly by tourists.
Only 22% / 9 shops are used mainly by local residents.
These 9 shops would also be used by tourists.
Lots of / most numerous shops are gift shops which are tourist shops.
9 shops are used by both tourists and residents. [2]

(c) (i) Trial / practise / before real survey.
Important to see if the scoring system works / if it needs to be modified / study methodology. [2]

(ii) How many survey points to choose.
Too few points and the survey is without substance.
Too many points and the survey is time consuming.
Which characteristics / criteria will be measured in the survey / what do they want to investigate.
Where to locate the survey sites / which sites to investigate.
Survey sites must be at different distances from the car park.
How will they score the survey (what level will each number represent).

Generic decision – how many students will go to each site / time of survey / who goes to each site – 1 mark maximum.
3 @ 1 mark [3]

(d) (i) 1 mark for line at +1 on D.
1 mark for shading both bars.
2 @ 1 marks [2]

(ii) Similarity: litter / noise / tourist signs and adverts all scored same / –1.
Difference: Crowding is –2 at A and 0 at C / A is more crowded.
Tourist buildings is –1 at A and 0 at C / more tourist buildings at A. [2]

(iii) Either: hypothesis is true ✓Ha
Or: generally true / not completely true / there is one exception ✓Ha.

Evidence to support conclusion or identify the anomaly (A/B) -
2nd mark
Sites A and B have more impact than sites C and D
D experiences the least tourist impact and is furthest from the car park
Sites nearer car park are more affected than sites away from the car park
However, B experiences a bigger impact than A, even though
A is nearer to the car park [2]

(iv) Sites A / B nearer to:
Tourist shops / tourist services / tourist buildings
Main road
Hotels
Car park

Sites C / D:
Away from the main tourist area
Nearer to local shops
Nearer to housing areas

3 marks maximum for A/B or C/D
No double credit for opposites [4]

(e) Any issue – 1 mark reserve.
(e.g. Peoples' jobs, level of education, amount of green space, traffic, other aspect of tourism).

Possible investigation on where tourists to the village come from, how they travel to the village, their likes and dislikes of the village.

Methodology – reference to:
Questionnaire
Appropriate sampling technique
Examples of questions to be asked.
Tally chart.
Mapping and graphing of responses. [4]

[Total: 30]

2 (a) (i) Burning fossil fuels
Burning coal
Burning oil
Burning vegetation
Smoke from steam train
Factories releasing gases into atmosphere
Exhaust emissions / fumes / gases from cars / planes
CFCs Spraying insecticides
2 @ 1 marks [2]

(ii) Acid rain
Acidity increases in lakes; causing fish to die
Trees are damaged as acid water falls onto leaves
Soil water becomes acidic; which affects nutrient uptake to trees / plants; increased leaching
Global warming / enhanced greenhouse effect
Melting of ice caps
Rise in global temperatures
Increase in tropical storms
Enlarges hole in ozone layer [3]

(b) Wind blows most frequently / most often / most common direction /main wind direction. [1]

(c) (i) Wind vane / wind sock.
Rain gauge / measuring cylinder / container with measurements. [2]

(ii) Needed many measurements for reliability of results / fair results.
Take account of change in wind direction.
Takes some account of seasonal variation / no seasonal variation.
Get an average / total each month. [2]

(iii) It may have been difficult to take measurements every day for four months.
School holidays / access to school at weekends / forgetfulness / illness.
Difficult to take readings at the same time each day .
Measuring instruments are not very accurate.
Student error.
Equipment breaks.
Interference from other students / animals.
Difficult to measure small amounts of rainwater when recorded as trace.
Cannot take pH reading from a trace amount. [3]

(iv) Hypothesis 1 is correct / generally correct / partially correct ✓Ha.
pH value is lower / more acidic when wind blows from the east.
Anomaly – North & South East have same pH.

Credit any two figures for 1 mark. [3]

(v) Power station / factories / motorways / airport / railway / CBD / urban area are located east of the school / upwind.
These are main sources of gases / chemicals / air pollution / sulphur dioxide / nitrogen oxide.
When wind blows from the east it carries these gases.
Deposits them on the school as acid rain when it rains.
Credit either reference to 'east'. [3]

(d) (i) Plotting points: 2 @ 1 mark.

Draw in best-fit line = 1 mark. [3]

(ii) Yes, do agree with students ✓Ha.
Graph shows as the number of dry days increase the average pH reading decreases / negative or inverse relationship.
As the number of dry days increases rainfall is more acidic.
Can use two sets of figures to compare.
(e.g. 0 dry days = 5.7 pH, 10 dry days = 4.3 Ph) [2]

(e) (i) Possible hypothesis ✓Ha.
(e.g. Water pollution of a stream increases downstream).
Survey study area and note possible pollution sources.
Select about 10 sites for more detailed survey.
Devise a recording sheet for measurements.
Possible tests, (e.g. clarity, survey of water species, water temperature, pH, water transparency, quantity of litter).

To 2 marks maximum.
Credit 1 mark for equipment / clothing.
Accept detailed description of methods for one test. [4]

(ii) Recommendations such as:
Monitor pollution levels closely
Take action to reduce pollution levels / warning signs / litter / wardens / warn factories about level of pollution.
Legislation to prevent pollution / fines.
Education / publicity campaign to reduce pollution / make people aware that they are causing pollution.

[Total: 30]