UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2011 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.

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1 (a) (i) Area served by a settlement or service [1]

(ii) High / low order of services provided
Number / variety of services provided / more services
Specialised services available
Specific functions of different settlements
Ease of access to settlements / transport links
Smaller centres means more competition
Comparative examples of services with different sphere of influence [3]

(b) (i) Q1: Should only be asking students at school so superfluous question / obvious answer / waste of time
Q2: Too vague to get specific and consistent answers / too personal / should give options
Q3: Closed question, very specific answer / give options of methods of travel / ask about how travel to school / sometimes [3]

(ii) Credit explanation. No mark for 'Yes'
Enough responses to be able to test the hypotheses / to compare / reliable
10% of population is a representative sample
Waste of time / no time to do more [2]

(iii) Use registers / school data base to sample every tenth students
Select students from different class / year group / ages
Select equal numbers of male / female students
1 mark for naming sampling method – random, systematic, stratified – must link to description [2]

(c) (i) Insert data (7) for Feng Tai into table – both tally and total for mark [1]

(ii) Insert seven symbols into Tong Zhou [1]

(iii) Shade Xi Cheng (15 – 19 category) [1]

(iv) Pictogram:
Shows individual detail of numbers / exact number
Easy to read off individual numbers / easy to count / identify exact number
Can see overall pattern of distribution
Easy to compare numbers
Easy to understand / clear / simple / detailed / visual

Choropleth map:
Shows overall pattern of distribution / compare areas
Links similar areas within a category / groups
Can be used to compare large numbers
Clear visual impact / shading categories in key 4 @ 1 [4]

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(v) No / disagree / no clear pattern / true to some extent that numbers decrease with distance – reserve
Some areas away from school are in high category
Some areas near to school are in low categories
General pattern is more students come from north & east, and less come from south & west, rather than distance away from school
e.g. Ping Gu (district 12) has 15 students / e.g. Chao Yang (district 7) has 8 students
Data to 1 mark max – reserve [4]

(d) (i) Completion of table – 30% [1]

(ii) Pie graph completion – bus and car
1 mark for dividing line
1 mark for shading [2]

(iii) Larger percentage / most students travel to school by bus / 5% more travel by bus
Only 31% travel by car / 39 out of 125 travel by car / 69% don't travel by car / more travel by other methods than car
Almost as many (30%) travel by train
First part of hypothesis is correct – there are 5 ways that students travel to school
No credit just for percentage or figures without interpretation [3]

(iv) Additional questions in questionnaire such as:
How far is your home from school? / how far do you travel to school?
How long does it usually take you to travel to school? / average time to travel to school
Why do you use your named method of travel?
Do you always use the same method of travel? / more than one method of travel
Which route do you take to school?
Do students travel alone or with others
Could investigate if there is any relationship between where students live and their method of travel
Possibly linked to bus / train services
Could investigate links between gender / age & methods of travel [2]

[Total: 30]

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2 **(a)** Thermometer / maximum-minimum thermometer
Wet and dry (bulb) thermometer / hygrometer [2]

(b) To test the measuring equipment
To record weather conditions before & after investigation / control reading
To show the changes in weather conditions / compare results with other days [2]

(c) **(i)** Diagram = 1 mark
Labelling = 1 mark
e.g. Funnel placed into jar / open container used to collect water / measuring scale
Explanation = 2 marks
Jar stood firmly in ground / open ground / away from trees / fastened to pole
Water poured into measuring cylinder
Noting / recording water level in measuring cylinder / jar
Reading taken every 4 hours period of time / fixed period of time
Empty container after use [4]

(ii) Anemometer: cups / spoons revolve in the wind / spins / turns
Connected to meter which counts number of revolutions per minute
Shows reading as kms or miles per hour / reading from screen

Wind vane: Arrow points the direction the wind (is coming from)
Horse provides large surface area to catch the wind
N, E, S, W points / compass allow direction to be worked out 2 × 2 marks [4]

(iii) Index pointer set to previous / local weather station reading / is point of comparison
Other pointer moves to show current AP & index pointer shows change [2]

(iv) Oktas / eighths [1]

(d) **(i)** 1018 [1]

(ii) Rainfall bar to show 3 mm at 11.00 [1]

(iii) Completion of line graph to show atmospheric pressure
19.00 = 1012, 20.00 = 1015, 21.00 = 1018
1 mark for plots, 1 mark for joining lines [2]

(iv) Wind direction: S
Wind speed: 20 km/hr (10 mm) 2 @ 1 [2]

(v) Cumulus cloud with correct shape & light or no shading [1]

(vi) Shade in 7 oktas (any 7 segments) [1]

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(e) (i) As atmospheric pressure decreases / low, rainfall increases / high, / as atmospheric pressure increases / high, rainfall decreases / low, / negative / inverse relationship
e.g. AP at 1012 rainfall is 0/1 mm, AP 1022 rainfall is 0 mm
AP at 992 rainfall is 5 mm, 998 rainfall is 3 mm
Credit up to 2 marks for data (need mm) [3]

(ii) As atmospheric pressure decreases / low, wind speed increases / high,
as atmospheric pressure increases / high, wind speeds decrease / low
Atmospheric pressure at 1022 wind speed is 5 km/hr, OR
Atmospheric pressure at 1018 wind speed is 3 km/hr, OR
Atmospheric pressure at 1012 wind speed is 8/20 km/hr,

Atmospheric pressure at 998 wind speed is 26 km/hr, OR
Atmospheric pressure at 992 wind speed is 43 km/hr
Allow tolerance of 1 on both sets of figures
Credit up to 2 marks for data (need km/hour)

As atmospheric pressure falls winds change from SE to S to SW / towards west
As atmospheric pressure rises winds change SW to S to SE / towards east [4]

[Total: 30]

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