UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2009 question paper

for the guidance of teachers

0460 GEOGRAPHY

0460/12   Paper 12, maximum raw mark 75

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 must be read in conjunction with the question papers and the report on the examination.

* CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the October/November 2009 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

UNIVERSITY *of* CAMBRIDGE
International Examinations

The features of the marking scheme

Each question carries 25 marks. Candidates cannot earn above the maximum marks available within each sub section.

The marking scheme attempts to give guidance about the requirements of each answer and lists a number of responses which will earn marks along with the general principles to be applied when marking each question.

It should be noted that candidates can earn marks if their answers are phrased differently provided they convey the same meaning as those in the mark scheme. THE CANDIDATES DO NOT NEED TO USE THE SAME WORDING TO EARN MARKS.

The notation 'etc' at the end of an answer in the mark scheme signifies that there may well be other correct responses or examples that can be given credit. Providing the statement is true, relevant to the question asked and not repetition of a previous point made credit should be given.

A point made within one sub-section which is an answer to the question set in a different sub-section should not be given credit as each sub-section asks different questions which require independent answers.

The mark scheme uses semi colons (;) to separate marks and diagonals to separate alternative answers.

During coordination the mark scheme is modified to add points agreed after discussion or to delete any points not allowed. All examiners should ensure that their modified scheme is fully up-to-date before marking begins.

Marking mechanics.

Point marking is used for sections (a) and (b) of each question, although marks are available in specified questions for development of appropriate points. Ticks should be used to clearly indicate the wording on a script where a mark has been allowed. Where a development point has been allowed the letter 'D' should be placed adjacent to the tick. The number of ticks should always be equal to the total number of marks awarded, the mark for each sub-section should be added up and placed in the margin at the end of the sub-section. The total mark for the entire question should be added and transferred to the front of the script.

Where a candidate makes a point which is not quite sufficient for credit an upturned 'V' insert symbol should be used. If after careful consideration a mark is awarded which gives 'benefit of doubt' to the candidate the letter 'J' should be placed adjacent to the tick (i.e. the candidate has 'just' achieved the mark).

Levels of response marking is used for section (c) of each question.
Thus it is the quality of the response which determines which level an answer is achieved rather than the quantity of statements contained within it. However once assigned to a level the mark achieved within that level is determined by the number of points made.

Levels 1 and 2 are distinguished by whether statements are simple (level 1) or developed/elaborated (level 2). A candidate can immediately enter L2 by making developed points without making any L1 statements. In order to achieve L3 a candidate must have already reached the top end of L2 – in addition his/her answer should have a clear example (for 6 marks), and if the answer is place specific as well (7 marks).

Page 3	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2009	0460	12

Where statements are assigned levels by the examiner this should be indicated by the use of L1, L2 and L3 next to the statements. A summary of the overall level and mark awarded should be written at the end of the answer. Ticks should **not** be used on answers which are marked using levels of response marking.

Summary:

Level 1 (1 to 3 marks):
1 simple statement (1 mark)
2 simple statements (2 marks)
3 simple statements (3 marks)

Level 2 (4 to 6 marks):
1 developed statement (4 marks)
2 developed statements (5 marks)
3 or more developed statements with e.g. (6 marks)

Level 3 (7 marks)
3 or more developed statements + named example with at least one piece of place specific detail.

All answers, whether marked by point marking or levels, should have signs of having been assessed by the examiner. Crosses are acceptable to signify wrong answers and a red line accompanied by the letters 'I/R' should be used to indicate those which are irrelevant.

PMT

Page 4	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2009	0460	12

1 (a) (i) The (average) number of births per 1000 (of the population)
1 mark [1]

(ii) Birth rate minus death rate/20 minus 8 (1st mark);
= 11/12 per 1000 (2nd mark) or 1.1/1.2%
2 @ 1 mark [2]

(iii) A = Africa
B = Asia/South America/Oceania
C = Europe
3 @ 1 mark [3]

(iv) Ideas such as:
availability of contraception/family planning;
educated re. contraception;
able to afford contraception;
not likely to want children to work on the land/send out to earn money etc.;
children have to attend school;
availability of pensions/not likely to want children to look after parents in old age;
high cost of education/bringing up children;
equality of women;
many women are career orientated;
many people are materialistic;
people not strongly influenced by tradition/culture/religion such as the need for boys rather than girls;
low infant mortality rate etc.
4 @ 1 mark [4]

(b) (i) Problems such as:
need to provide more pensions/higher taxation;
need for more money to be spent on care homes/warden assisted homes:
need for more money to be spent on health care/doctors/nurses
need for more money to be spent on facilities for elderly such as hand rails/stair lifts etc.;
not enough workers;
lack of innovation;
difficult to defend country;
services for young under utilised/uneconomical;
strain on working population/higher dependency rates/working population have more people to look after etc.;
money needs to be invested in leisure/social facilities for elderly
3 @ 1 mark [3]

(ii) Ideas such as:
provides more workers;
e.g. skilled labour supply/doctors/dentists/technicians (dev);
or cheap/easily exploited labour (dev);
to do jobs locals do not want (dev);
results in a multi-cultural society;
which enhances cultural understanding (dev);
provision of specialist amenities;
e.g. restaurants/takeaways (dev) etc.
5 @ 1 mark or development [5]

Page 5	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2009	0460	12

(c) Levels marking

Level 1 (1–3 marks)
Statements including limited detail which describe and/or suggest reasons for variation in population density.
(e.g. south is more densely populated than north, more water supply, more jobs, not enough food produced in north, better communications in south etc.)

Level 2 (4–6 marks)
Uses named example
More developed statements which describe and/or suggest reasons for variation in population density.
(e.g. south is more densely populated than north in the main river valleys, more water supply for agriculture in the south so more food produced, more jobs in south where most towns and cities are located, better communications including airport in south etc.)
NB No named example = 5 MAX

Level 3 (7 marks)
Uses named example (e.g. Niger).
Comprehensive and accurate statements including some place specific reference.
(e.g. the south has more water than the north therefore lack of domestic/agricultural water supply in north; the valley of the river Niger is densely populated as it is an attractive area to settle as it offers the best land to build settlements/communications/most fertile land; densely populated areas in south are better served by communications/airport at Bamako; southern parts are closer to boundaries of more countries e.g. Guinea/Ivory Coast thus more opportunities for trade etc.) [7]

[Total: 25]

2 (a) (i) Buildings are scattered/long distances apart
1 mark [1]

(ii) Ideas such as:
avoid flood plain/marshy land/away from river;
avoid high land/base of slope/land is flat/low;
significance of road transport etc.
2 @ 1 mark [2]

(iii) Nucleated/nuclear = 1 mark (Reserved)
Reasons such as:
Cross roads/access in all directions/good accessibility;
Flat land etc.
3 @ 1 mark [3]

(iv) Ideas such as:
lack of employment/high paid jobs;
lack of health care provision;
lack of educational facilities;
lack of piped water supply;
lack of electricity supplies;
lack of entertainment facilities;
poor crop yields;
drought/floods etc.
4 @ 1 mark [4]

Page 6	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2009	0460	12

(b) (i) Photograph A = Market
Photograph B = Port/harbour/docks
Photograph C = Industry/factory
3 @ 1 mark [3]

(ii) Candidates can select any photograph, Credit ideas appropriate for photograph/function chosen (e.g. Photograph B Port). Ideas such as:
next to the sea;
located on estuary;
deep water anchorage;
sheltered anchorage;
space for expansion of warehouse facilities;
large hinterland of industrial towns;
well developed road/rail communications etc.
5 @ 1 mark or development [5]

(c) Levels marking

Level 1 (1–3 marks)
Statements including limited detail which describe impacts of growth on natural environment.
(e.g. pollution of rivers, air pollution, loss of vegetation, visual pollution etc.)

Level 2 (4–6 marks)
Uses named example
More developed statements which describe impacts of growth on natural environment.
(e.g. pollution of rivers by sewage from residential areas, air pollution from factories/exhausts, deforestation when land cleared for building housing areas etc.)
NB No named example = 5 MAX

Level 3 (7 marks)
Uses named example (e.g. Delhi).
Comprehensive and accurate statements which describe impacts of growth on natural environment, with some place specific reference.
(e.g. pollution of river Yumuma by sewage from residential areas, air pollution from factories/exhausts, deforestation when land cleared for building housing areas at Shahdrara etc.) [7]

[Total: 25]

3 (a) (i) Something which cases harm/a dangerous event resulting from the earths forces
1 mark [1]

(ii) A = Earthquake/Volcanic eruption.
B = Drought/tropical storm/flood.
2 @ 1 mark [2]

(iii) Ideas such as:
Droughts are more predictable;
Droughts affect bigger area;
Earthquakes have more short term effects;
Droughts have more long term effects
3 @ 1 mark [3]

   (iv) Ideas such as:
      quality of buildings;
      prediction;
      evacuation procedures;
      education re. precuations
      drills;
      level of medical care;
      rescue procedures;
      accessibility for rescue etc.
      4 @ 1 mark   [4]

(b) (i) Ideas such as:
      plates move in relation to each other;
      friction/plates get locked together/build up of pressure;
      pressure released/sudden jolt;
      seismic waves/vibrations on surface etc.
      3 @ 1 mark   [3]

   (ii) Ideas such as:
      they have lived there all their lives;
      they are close to family/friends;
      they work in the area;
      they cannot afford to move;
      they are willing to take the risk;
      earthquakes do not occur often;
      there is no room available to live in other areas etc.
      5 @ 1 mark or development   [5]

Page 8	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2009	0460	12

(c) Levels marking

<u>Level 1</u> (1–3 marks)
Statements including limited detail describing long or short term impacts of an earthquake.
(e.g. Lots of people were killed/injured, many houses collapsed, roads/railways were blocked, it left people homeless, lots of fires broke out across the city etc.)

<u>Level 2</u> (4–6 marks)
Uses named example
More developed statements describing long or short term impacts of an earthquake.
(e.g. Nearly 5000 people died, over 14000 people were injured, most people died through being crushed by collapsed houses, electricity supplies were cut off across the city as cables were cut, many of the large factories in the industrial district were badly damaged and so production had to stop, housing destroyed by seismic waves/fires, communications disrupted by roads being buckled, etc.)
NB No named example = 5 MAX

<u>Level 3</u> (7 marks)
Uses named example (e.g. Kobe earthquake).
Comprehensive and accurate statements referring to short and long term effects, including some place specific reference.
(e.g. Large areas of the central city were set alight by fires staring from broken gas pipes; The Hanshin expressway, a main route through Kobe, collapsed on to the road below; this occurred where the road crossed areas of softer, wetter ground where the shaking was stronger and lasted longer; the port area was particularly badly affected as it had been constructed on two artificial islands, which suffered from liquefaction; the port had to be closed for two months, which meant that trade, had to be switched to other ports; there was a drop in the production of steel and car plants throughout Japan had to close or cut production; as there was a shortage of parts, which were made in Kobe etc.   [7]

[Total: 25]

4 (a) (i) Monday/21st
1 mark   [1]

   (ii) Ideas such as:
   Estimated by eye/observation/look at sky;
   number of eights of the sky which is covered/proportion of the sky covered/measured in oktas;
   plotted within circle/station plot etc.
   2 @ 1 mark   [2]

   (iii) A. Wet and dry (bulb) thermometer/hygrometer
   B. Anemometer
   C. Barometer
   3 @ 1 mark   [3]

   (iv) Ideas such as:
   read off maximum temperature/minimum temperature;
   read at lower end of each index;
   work out difference between maximum and minimum;
   read at eye level;
   reset with magnet;
   4 @ 1 mark   [4]

(b) (i) Differences such as nimbostratus;
are more likely to produce rain;
are at a lower level;
form a more complete cloud cover;
are darker/grey but altocumulus are white etc.
3 @ 1 mark [3]

(ii) Ideas such as:
heating from overhead sun/high angle/shining directly;
high temperatures/hot climate;
evaporation/transpiration;
high humidity;
uplift/rising water vapour/air;
reaches cooler air;
large amount of condensation;
saturation etc.
5 @ 1 mark or development [5]

(c) Levels marking

<u>Level 1</u> (1–3 marks)
Statements including limited detail describing the impacts of human activities on the natural environment of rainforests.
(e.g. trees are being chopped down, animals are killed, it causes floods, it washes soil away, it makes the land bare etc.)

<u>Level 2</u> (4–6 marks)
Uses named example
More developed statements explaining the impacts of human activities on the natural environment of rainforests.
(e.g. trees are being chopped down which reduces biodiversity, it kills animals threatening species with extinction, loss of rainforests threatens species as it disrupts food chains, loss of habitat reduces variety of species, reduces interception therefore increasing run off and causing floods etc.)
NB No named example = 5 MAX

<u>Level 3</u> (7 marks)
Uses named example (e.g. Amazonia).
Comprehensive and accurate statements explaining the impacts of human activities on the natural environment of rainforests, including some place specific reference.
(e.g. in Amazonia 1000s of species in the state of Mato Grosso are threatened with extinction, loss of habitat in marshy areas alongside river Amazon, reduces interception increasing run off; causes floods as soil is washed into river Amazon and its tributaries, reduces soil fertility etc.) [7]

[Total: 25]

5 **(a)** **(i)** Quebec
1 mark [1]

    (ii) A = Alberta/Saskatchewan
B = Ontario
2 @ 1 mark [2]

    (iii) Ideas such as:
Ontario nuclear is more important than in Quebec;
Ontario natural gas is more important than in Quebec;
Ontario coal is more important than in Quebec;
Quebec HEP is more important than in Ontario;
Quebec depends on HEP but Ontario on nuclear
3 @ 1 mark [3]

    (iv) Ideas such as:
some areas will have greater precipitation;
lots of melting snow/melting glaciers;
and steeply sloping/mountainous areas;
or more rivers (on which to build dams);
fast flowing rivers/waterfalls;
some will not have other available fuels therefore have to use HEP/some areas have few other options;
cost of development varies from area to area;
availability of technology/wealth/ability to fund HEP schemes etc.
4 @ 1 mark [4]

  (b) **(i)** C = Solar power
D = Wind power
E = HEP
3 @ 1 mark [3]

    (ii) Ideas such as:
they do not pollute the atmosphere/fossil fuels do pollute/environmentally friendly/'green' etc.;
they don't produce greenhouse gases/cause global warming;
they are not going to run out/fossil fuels are running out;
running costs are cheap;
maintenance costs are low etc.
5 @ 1 mark or development [5]

Page 11	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2009	0460	12

(c) Levels marking

Level 1 (1–3 marks)
Statements including limited detail describing problems of use of fuelwood for people and/or natural environment.
(e.g. pollutes the atmosphere, causes health problems, lost production, time consuming collecting wood, loss of tree cover, soil erosion etc.)

Level 2 (4–6 marks)
Uses named example
More developed statements describing problems of use of fuelwood for people and/or natural environment.
(e.g. pollutes the atmosphere with smoke/chemicals such as CO_2, causes health problems such as chest complaints/asthma/breathing difficulties, people cannot work in fields producing food if they are ill, time consuming walking long distances to collect wood, loss of tree cover causes soil erosion etc.)
NB No named example = 5 MAX

Level 3 (7 marks)
Uses named example (e.g. Ethiopia).
Comprehensive and accurate statements describing problems of use of fuelwood for people and natural environment, including some place specific reference.
(e.g. pollutes the atmosphere with smoke/chemicals such as CO_2, in squatter camps at Addis Ababa health problems caused such as chest complaints/asthma/breathing difficulties, in rural areas close to border with Eritrea people cannot work in fields producing food, time consuming walking long distances to collect wood, in northern region of Tigray loss of tree cover causes soil erosion etc.)   [7]

[Total: 25]

6 (a) (i) 25%
1 mark   [1]

(ii) A. Brazil
B. USA
2 @ 1 mark   [2]

(iii) Ideas such as:
many people work in agriculture;
not much mechanization;
many people lack education/skills;
lack of development of factories/services etc.
3 @ 1 mark   [3]

(b) (i) Raw material: limestone/clay/gypsum/fuel.
Process: roasting/heating (in kilns)/clinker crushed to powder.
Output: cement
3 @ 1 mark   [3]

(ii) Ideas such as:
employment in factory/income for people;
people can afford food/school fees etc.
multiplier effect;
schools are built;
hospitals/clinics are built;
development of transport network/roads;
development of electricity/water supply;
improves availability of cement/building materials etc.
4 @ 1 mark   [4]

(iii) Ideas such as:
atmospheric pollution/smoke from factory;
exhaust fumes from lorries;
acid rain;
pollution of rivers/groundwater;
visual impact;
clearance of natural vegetation;
impact on fauna;
impact on ecosystems/food chains
5 @ 1 mark or development   [5]

(c) Levels marking

<u>Level 1</u> (1–3 marks)
Statements including limited detail explaining the factors which have attracted high technology industries.
(e.g. large workforce, good transport/motorway links, cheap land, near to airport, Greenfield site etc.)

<u>Level 2</u> (4–6 marks)
Uses named example
More developed statements explaining the factors which have attracted high technology industries.
(e.g. skilled, highly qualified workforce, good motorway links to transport products from docks, proximity to international airport to bring in raw materials, greenfield sites which are attractive to workers etc.)
NB No named example = 5 MAX

<u>Level 3</u> (7 marks)
Uses named example (e.g. Malaysia).
Comprehensive and accurate statements including some place specific reference.
(e.g. skilled, highly qualified workforce, good motorway links, proximity to Kuala Lumpur international airport, government investment into planned high tech industrial areas such as at Penang (Silicon Island), government 'technology action plan' put emphasis on technology etc.)   [7]

[Total: 25]