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CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the May/June 2015 series

0460 GEOGRAPHY

0460/12 Paper 1 (Paper 1), 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 should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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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 where a mark has been allowed. The number of ticks should always be equal to the total number of marks awarded. Tick DEV should be used to indicate development. Development marks (point marking) are only available on part 'b ii' of each question.

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).Crosses should be used to signify wrong answers and the letters 'I/R' should be used to indicate those which are irrelevant.

Levels of response marking is used for section (c) of each question.
Thus it is the quality of the response that 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 and if the answer is place specific as well (7 marks). Highlight place specific detail.

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Where statements are assigned levels by the examiner this should be indicated by the use of L1 and L2 next to the statements. Ticks should **not** be used on answers that are marked using levels of response marking. L1 annotation should be removed once a L2 is awarded for an answer. L3 annotation is not used. There is no need for a summary level at the end of a response.

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.

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1 (a) (i) 11.5 (people) per 1000 die each year/in 2013

1 mark **[1]**

(ii) 9.4 – 11.5 (1 mark)
= -2.1 per 1000 (2nd mark)

2 @ 1 mark **[2]**

(iii) Ideas such as:

it decreases/net migration decreases/ overall increase in negative net migration;
2005–2006 slight increase in net migration/ slight decrease in negative net migration;
2006–2009 slight decrease in net migration/ slight increase in negative net migration;
2009–2010 net migration decreases steeply/ steep increase in negative net migration;
2010–2011 steep increase in net migration/ steep decrease in negative net migration;
2 years with figures –for example, from 2009 to 2010 it increased from –16 000 to –76 000. Need to include units (000's).

NB: 1 mark RESERVE for data. Focus is on change. Comments must relate to the line graph – net international migration. Allow a tolerance of + or – 1000 on statistics.

1 mark available for increase and decrease/fluctuating idea without qualification if marks not already awarded for trends.

3 @ 1 mark **[3]**

Statistics:

2005	2006	2007	2008	2009	2010	2011
–8000	–4000	–5000	–8000	–16 000	–76 000	–40 000

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(iv) Ideas such as:
loss of working population/loss of young population/jobs not filled/loss of economically active/less pressure of jobs;
under-population;
increase in wages;
shortage of skills or example/lack of innovation;
decline in economy/production is lower/GNP reduced;
hard to produce enough food;
families split up;
declining birth rate;
loss of traditional culture;
money /remittances sent home by migrants;
less pressure on services/housing;
resources wasted/less demand for resources;
less taxes paid/taxes increases/less government money e.g. for pensions;
ageing population/increased dependency ratio;
gender imbalance;
closure of businesses/businesses make less profit/less spending power;
closure of amenities or services or example such as schools or hospitals;
less traffic congestion;
less specified pollution (MAX 1);
more difficult to defend the country;
government adopts a pro-natalist policy;
encourage migrant workers/encourage workforce another country;
country becomes less attractive for investors etc.

4 @ 1 mark **[4]**

(b) (i) Ideas such as:
increase in size/has grown/has expanded/it is much bigger/urban sprawl;
four to six times bigger/increased from 64–225 square km to 500–750 square km;
especially to south east /north west/west/south;
8–15 km N–S (length) increase to 2 5–30 km/three times bigger from N to S;
8–15 km W–E (width) increase to 20–25 km/two times bigger from E to W;
some infilling;
became more elongated/more rectangular etc.

NB: No reserve on shape or size. Focus on change. No maximum on statistics.

3 @ 1 mark **[3]**

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(ii) Ideas such as:
housing estates/new housing/detached housing/high quality housing;
retail parks/shopping centres/supermarkets/hypermarkets;
large areas for parking;
ring roads/motorways/by passes;
leisure centres/specific type of leisure provision;
industrial estates/new factories/science parks/footloose industries;
parks/state parks/theme parks/country parks;
farmland/plantation/fields/crops/pasture/grazing land/forestry;
squatter settlements;
power stations;
airports;
sewage works;
refuse tips/landfill sites;
quarries;
game reserves;
botanical gardens;
commuter/suburbanised villages;
reservoirs.

NB: Development is of the description. Do not credit explanation.

5 @ 1 mark or development **[5]**

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(c) Levels marking

Level 1(1–3 marks)
Statements including limited detail which explain reasons for internal migration.

Level 2 (4–6 marks)
Uses named example.

More developed statements which explain reasons for internal migration.

NB: Max 5 if no named or inappropriate example. Any country is valid. MAX 5 if international migration as inappropriate example.

Level 3 (7 marks)
Uses named example.
Comprehensive and accurate statements which explain reasons for internal migration, including some place specific reference.

Content Guide:
Answers are likely to refer to:
employment,
health care,
education,
drought,
food supplies,
political issues,
war,
wages,
standard of living etc.

NB: No double credit for pulls and pushes. Development is of the explanation. Answers relating to commuting and tourism = 0.

Place specific reference is likely to consist of:
named parts of the chosen country/locational detail,
population data etc.

[7]

[Total: 25 marks]

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2 (a) (i) 7 km^2

1 mark **[1]**

(ii) Ideas such as:
lack of space/to save space/there is not much room/little land;
high demand for land/lots of government buildings /shops /businesses locate here/many people work in the CBD;
expensive land/to reduce costs/it is cheaper;

2 @ 1 mark **[2]**

(iii) Ideas such as;
proximity to motorways/Queen Elizabeth Way/Don Valley Parkway;
built along railway lines/railway runs through the area;
close to docks;

3 @ 1 mark **[3]**

(iv) Ideas such as:
Centrally located CBD in both MEDC and LEDC;
In both MEDC and LEDC there are distinct zones of housing of different cost/quality;
higher cost/class/quality housing tends to be close to CBD in LEDC/further away in MEDC;
lower cost/class/quality housing tends to be close to CBD in MEDC/further away in LEDC;
industry is close to transport links in both LEDC and MEDC/near edge of city in both/near centre in both;
areas of shanty town/squatter settlement in LEDC but not in MEDC;
housing near CBD in LEDC but industry near CBD in MEDC;

NB: Focus is on comparison and also on pattern – where they are located and not the amount.

4 @ 1 mark **[4]**

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(b) (i) Ideas such as:
more bicycles in China/less in Canada;
more metro/bus/train (public transport) in China/less in Canada;
more cars in Canada/less in China;
the most important in Canada is cars but the most important in China is bikes (or similar idea to MAX 1).

NB: Accept statistics as alternatives. Names of country/countries required. No tolerance on statistics.

3 @ 1 mark **[3]**

	Bicycles	**Metro/Bus/Train**	**Cars**
Canada	10/11	8/9	80/81
China	65	19	16

(ii) Ideas such as;
delays/wastes time/have to allow more time/longer journeys;
lateness for school/work;
loss of productivity/companies lose profit;
increased risk of accidents/more deaths and injuries from accidents;
noise pollution;
which makes concentration difficult;
atmospheric pollution/exhaust fumes/smog/appropriate named gas;
acid rain or named effect;
global warming or named effect;
reduced visibility;
causes difficulty breathing/problems for asthmatics/eye irritations;
road rage/frustration;
difficult for emergency services to access;
difficult for firms to get deliveries;
increased use of fuel/higher fuel costs.

5 @ 1 mark or development **[5]**

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(c) Levels marking

Level 1 (1–3 marks)
Statements including limited description and/or explanation of attempts to solve traffic problems.

Level 2 (4–6 marks)
Uses named example
More developed statements describing and/or explaining attempts to solve traffic problems.

NB: MAX 5 if no named example or inappropriate example. Accept conurbation, city, town or part of an urban area.

Level 3 (7 marks)
Uses named example. More developed statements describing and explaining attempts to solve traffic problems, including some place specific reference. (If there are three developed descriptive statements, explanation can be at L1 to award this level and vice versa)

Content Guide:
Answers are likely to refer to;
ring roads,
build /improve/repair roads
by pass,
pedestrianisation,
public transport,
cycle lanes/bike hire schemes,
park and ride;
congestion charges;
traffic lights;
speed bumps etc.

Place specific reference is likely to consist of:
named parts of the chosen city,
specific schemes etc.

NB: Development is of the description or the explanation. For example, people are encouraged to walk (L1) by the use of pedestrian zones (L2). Focus is on the methods used to solve traffic problems.

[7]

[Total: 25 marks]

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3 (a) (i) Breakdown of rock <u>in situ</u> (or alternative wording)/ decomposition or disintegration of rock

1 mark **[1]**

(ii) C
A
B

All 3 correct = 2 marks
1 or 2 correct = 1 mark

2 @ 1 mark **[2]**

(iii) Ideas such as;
heating during day/high temperatures during the day;
cooling during night/low temperatures at night **(or alternative heating and cooling)**;
rock/outer layer expands <u>when heated</u>;
rock/outer layer contracts <u>when cooling</u>; **(or alternative expansion and contraction)**;
(outer layer of) rock peels/(outer layer of) rock falls off/peels like an onion.

Bold comments in brackets show a one mark alternative to the two lines.

3 @ 1 mark **[3]**

(iv) Ideas such as:
water enters cracks in rocks;
temperatures fall <u>below 0C</u>/temperature falls below freezing;
ice forms/water freezes;
takes up more space than water/it expands;
enlarges crack/widens the joints;
pieces of rock break off/scree forms;
temperatures rise and ice melts;
repeated process etc.

4 @ 1 mark **[4]**

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(b) (i) Ideas such as:
faster rate of weathering if rock is soluble/high rate of solution;
faster rate if rock is jointed/if rock has many lines of weakness;
faster rate if soil is thick etc.

NB: Accept vice versa answers. Focus is on description not explanation. References to hard or soft rock and rainfall and temperature are irrelevant.

3 @ 1 mark **[3]**

(ii) Ideas such as;
more weathering when it is hot or vice versa;
more weathering when rainfall is high or vice versa;
more/especially chemical weathering/carbonation/oxidation (dev);
as it speeds up the reactions;
more/especially biological weathering (dev);
as plants grow more quickly;
more exfoliation/physical weathering where alternate hot and cold temperatures;
more freeze-thaw/physical weathering when temperatures fluctuate around zero etc.

5 @ 1 mark or development **[5]**

(c) Levels marking

Level 1 (1–3 marks)
Statements including limited detail describing and/or explaining the distribution of fold mountains.

Level 2 (4–6 marks)
Refers to at least one named example
More developed statements describing and/or explaining the distribution of fold mountains.

NB: MAX 5 if no named or inappropriate example. Accept names of mountains or mountain ranges. One example is fine.

Level 3 (7 marks)
Uses at least one named example. More developed statements describing and explaining the distribution of fold mountains.
Including some place specific reference. (If there are three developed descriptive statements, explanation can be at L1 to award this level and vice versa).

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Content Guide:
Answers are likely to refer to;
plate movement,
continental plates meet/collision margins,
subduction/continental and oceanic plates meet/destructive margins,
plate density,
uneven distribution,
narrow belts,
uplift etc.

Place specific reference could consist of:
named plates
mountains
mountain ranges

[7]

[Total: 25 marks]

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4 (a) (i) 30C and 2500mm

NB: If candidates have more than one tick = 0 marks.

1 mark **[1]**

(ii) Labelling in Fig. 6

2 @ 1 mark **[2]**

(iii) Ideas such as
heating by sun/high temperatures/direct sunlight;
evaporation;
transpiration/evapotranspiration;
ascending air/convection;
cooling;
condensation/cumulus or cumulonimbus clouds form;
saturation.

3 @ 1 mark **[3]**

(iv) Ideas such as:
high rainfall/humid/use of rainfall statistics;
high temperatures/use of temperature statistics;
optimum/ideal/perfect growing conditions/(frequent) photosynthesis;
no seasons/continuous growing season/hot and wet all year round;
many layers of vegetation;
rapid nutrient cycling;
habitats for organisms/or example/provides shelter or shady areas;
large supplies of food for insects/animals/birds/decomposers;
many areas are still not exploited by people/little human disturbance.

4 @ 1 mark **[4]**

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(b) (i) Ideas such as:
cattle/ ranching;
forestry/selling of wood for profit/lumbering;
mining;
commercial farming/planned agriculture;
highway building/maintenance/transport of goods;
selling fish/fishing for profit.

3 @ 1 mark **[3]**

(ii) Ideas such as;
creation of oxygen;
reduction of carbon dioxide;
'lungs of the earth';
reduces global warming/reduces greenhouse effect;
reduces coastal or global flooding risk;
impact on transpiration/water cycling/rainfall patterns;
source of medicines;
some undiscovered are potential cures for eg cancer;
source of raw materials/fuels/resources or example;
diversity of species/biodiversity/there are millions of species;
preservation of cultures etc.

5 @ 1 mark or development **[5]**

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(c) Levels marking

Level 1 (1–3 marks)
Statements including limited detail which describe impacts of deforestation on local natural environment.

Level 2 (4–6 marks)
Uses named example.

More developed statements which describe impacts of deforestation on local natural environment.

NB: MAX 5 with no named example or inappropriate example. Accept countries except Brazil or a country where there is only a small amount of rainforest such as Australia.

Level 3 (7 marks)
Uses named example.
Comprehensive and accurate statements including place specific reference.

Content Guide:
Answers are likely to refer to impacts on:
species,
habitats,
food chains,
soils,
rivers etc.

Place specifics references are likely to be to named parts of the chosen rain forest or named species.

[7]

[Total: 25 marks]

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5 (a) (i) on graph (allow tolerance of 1% either way)

1 mark **[1]**

(ii) raw materials = items which are processed in factory/materials used to produce or make a product/resources from the land or sea.

market = place where finished products are sold/people who buy the products or finished goods.

2 @ 1 mark **[2]**

(iii) iron and steel making is closer to source of power/bakery is further away from source of power/power is more important for iron and steel than bakery;
bakery is closer to market/iron and steel is further away from the market/market is more important for bakery than iron and steel;
iron and steel is closer to raw materials/bakery is further away from raw materials/raw materials are more important for iron and steel than bakery;
most important for iron and steel is raw materials whereas for bakeries it is the market.

NB: Accept comparative data. Tolerance of 1% on statistics. Answer should compare.

	Close to market	**Close to power**	**Close to raw materials**
Bakery	84	8	8
Iron and steel	10	40	50

3 @ 1 mark **[3]**

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(iv) Ideas such as:
industries aim to keep transport costs as low as possible/decrease transport costs;
if raw materials are bulky/heavy/large amounts the factories will be located close to their source;
if power supplies (e.g. coal) are heavy/large amounts the factories will be located close to them (e.g. mines);
if finished products are bulky/heavy/large amounts the factories will be located close to market;
factories sometimes locate close to a cheap method of transport (e.g. rail, canal) to lower transport cost;
near to port for importing raw materials/ exporting goods.

4 @ 1 mark **[4]**

(b) (i) Ideas such as:
growth overall/ increases between 1995 and 2004;
increase between 1995–2000/increase up to 2000;
decrease 2000–2003;
increase from 2003–2004; (**decrease 2000–2004**)
use of statistics to illustrate above points (1mark RESERVE) – need a pair of statistics or total change between the two years. Need millions. No tolerance on statistics.

3 @ 1 mark **[3]**

95	**96**	**97**	**98**	**99**	**2000**	**01**	**02**	**03**	**04**
5	6	6.5	7.5	8	11	10	9.5	9	10

Comment in brackets and bold shows a one mark equivalent to the two lines.

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(ii) Ideas such as;
creation of jobs;
skills gained;
with high salaries/rates of pay/people become better off;
multiplier effect;
more exports/reduced imports;
increased GNP/economy grows/wealth of country increases/makes economy stronger;
benefits balance of payments/more foreign currency;
more money earned through taxation;
health care/education/services can be improved;
infrastructural development/roads/electricity/water supplies;
standard of living improves/quality of life improves;
increased personal spending on housing/clothing/food/healthcare etc;

NB: No reserve on people or economy.

5 @ 1 mark or development **[5]**

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(c) Levels marking

Level 1 (1–3 marks)
Statements including limited detail explaining location of high technology industry.

Level 2 (4–6 marks)
Uses named example
More developed statements explaining location of high technology industry.

NB: MAX 5 marks with no named example or inappropriate example.

Level 3 (7 marks)
Uses named example.
comprehensive and accurate answer explaining location of high technology industry including some place specific reference.

Content Guide:
There will be likely reference to ideas such as:
- transport links
- close to components (raw materials = 0)
- labour supplies
- cost of land
- government incentives
- footloose industry
- environmental attractions
- economies of agglomeration
- market/demand etc.

[7]

[Total: 25 marks]

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6 (a) (i) on map – if any other part of map shaded as well = 0

1 mark **[1]**

(ii) area of high rainfall/rainfall above 1500 mm
in mountains/on high ground/above 500 metres;

2 @ 1 mark **[2]**

(iii) one towards east;
one inland/in the centre;
on and around/close to 8N;
NE/NW of reservoirs;
0–200 metres/20 1–500 metres/below 500 m;
Within 100 km of the reservoirs.

3 @ 1 mark **[3]**

(b) (i) Ideas such as:
water held in reservoir/water stored behind dam;
flows down slope/into water inlet/through control gate;
turns turbine;
turbine linked to generator/creates electricity.

3 @ 1 mark **[3]**

(ii) Benefits such as:
it is renewable/won't run out;
cheaper running costs;
it does not pollute the atmosphere/does not produce carbon dioxide;
so will be less likely to enhance global warming;
does not produce acid rain;
benefits of multi-purpose schemes – for example, recreation or irrigation (MAX 1)
there are no waste products;
it does not depend on imports etc.

NB: Accept vice versa answers but do not double credit e.g. fossil fuels will run out.

4 @ 1 mark **[4]**

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(iii) Ideas such as;
in mountainous areas/on steep slopes/drop in height;
where it is easy to build dams/in a valley;
on/next to/close to (fast flowing) rivers;
in areas with high amounts of precipitation;
so water flow will be constant;
in areas where temperatures do not fall below zero for long periods of time;
so rivers/reservoir does not ice over;
in sparsely populated areas;
so there is less opposition;
impermeable rock;
firm foundations/hard rock/not prone to earthquakes;
two lakes at different levels.

5 @ 1 mark or development **[5]**

(c) Levels marking

Level 1 (1–3 marks)
Statements including limited detail describing problems caused for people by using fuel wood

Level 2 (4–6 marks)
Uses named example
More developed statements describing problems caused for people by using fuel wood

NB: MAX 5 if no named or inappropriate example. A desert or continent is **not** an appropriate example.

Level 3 (7 marks)
Uses named example.

Comprehensive and accurate statements, including some place specific reference.

Content Guide:
Answers are likely to refer to:
Distance to travel/time consuming;
risk of fires;
lung cancer;
impacts of erosion of unprotected soil (on people);
breathing difficulties etc.

Place specific reference is likely to consist of:
References to places within the country/locational details etc.

NB: The focus is on people not environment. The focus is on impact and not the cause.

[7]

[Total: 25 marks]

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