MARK SCHEME for the May/June 2012 question paper

for the guidance of teachers

0460 GEOGRAPHY

0460/12   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 must be read in conjunction with the question papers and the report on the examination.

- Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2012 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

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.

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. Using the Scoris marking system ticks should be used to clearly indicate where a mark has been allowed. Where a development point has been allowed the symbol `DEV` should be placed adjacent to the tick. The number of ticks should always be equal to the total number of marks awarded.

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 symbol `JU` should be placed adjacent to the tick (ie the candidate has `just` achieved the mark).

Crosses are acceptable to signify wrong answers and the letters `I/R` could 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).

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.

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)

No example/inappropriate example = MAX 5 marks

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

Please ensure that the page of extra lines is marked as seen – this can be done using a `X` symbol or coloured block.

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1 (a) (i) Bihar/West Bengal/Kerala

1 mark [1]

(ii) 274.669 (per square km)
(accept to any decimal point e.g. 274.67, 274.7, 275) (1 mark)
2nd mark for calculation showing population divided by area or the words population divided by area. (2nd mark)

2 @ 1 mark [2]

NB 'per square km' is not essential

(iii) Rajasthan (11)/Madhya Pradesh (10)/Maharashtra (6) (2 marks for all 3, 1 mark for 1/2)
Similarity – all north (of 14N)/west (of 84E)/north west (1 mark reserved)

3 @ 1 mark [3]

(iv) Ideas such as:
lots of work opportunities/jobs available/people can make money;
high rates of natural growth/high birth rates/or any reason (MAX 1);
agricultural jobs are not mechanised/farming is labour intensive;
fertile soils available/enough food can be produced;
many people farm small plots of land;
many people migrate to such areas;
industries are labour intensive/not mechanised,
industrial areas have good access/roads etc.

4 @ 1 mark [4]

(b) (i) Ideas such as:
steep slopes/mountainous/high land (B/C);
arid conditions/desert area/lack of water (A/B);
ice and snow (C);
lack of employment (A/B/C);
isolation/lack of communications (A/B/C);
unable to grow crops (A/B/C);
infertile/rocky/barren/rugged (A/B/C) etc.

3 @ 1 mark [3]

(ii) Ideas such as:
around an oasis in a desert;
around rivers where they flow through arid areas;
mining settlement/to exploit a natural resource;
e.g. gold mine (dev);
growth of tourist resorts;
market towns;
route centres/junctions of major highways;
towns of strategic importance/defensive sites;
planned settlements/new towns etc.

5 @ 1 mark or development [5]

(c) Levels marking

Level 1 (1–3 marks)
Statements including limited detail explaining high birth rates.
(e.g. to send children out to work, because there is no contraception, because of their traditions etc.)

Level 2 (4–6 marks)
Uses named example
More developed statements explaining high birth rates.
(e.g. to send children out to work to earn money working in the towns, because contraception is not easily available in rural areas, because men are considered of higher status if they have more children etc.)

NB MAX 5 if no named or inappropriate example of country.

Level 3 (7 marks)
Uses named example (e.g. Swaziland).
Comprehensive and accurate statements including some place specific reference.
(e.g. to send children out to work to earn money working in the towns like Mbabane, because contraception is not easily available in rural areas, because men are considered of higher status if they have more children, polygamy is allowed even the king has many wives etc.) [7]

[Total: 25]

2 **(a)** **(i)** 1

1 mark [1]

(ii) A – Santander/HSBC
B – Mobile phones/Sports shops/betting shop/soap or cosmetics shop

2 @ 1 mark [2]

(iii) Ideas such as:
pedestrianised area;
banks;
lots of people/busy/crowded;
tall buildings/multi-storey/more than 2 storeys;
lots of shops/well known shops/chain stores/shops selling comparison goods/clothing shops etc.

3 @ 1 mark [3]

(iv) Ideas such as:
people travel long distances to use services/work;
high order services available;
specialist goods/services;
good transport links;
shops selling comparison goods;
larger shops/wider choice of product;
entertainment or examples etc.

4 @ 1 mark [4]

(b) **(i)** Ideas such as:
approx 10–12 kms long;
runs from North – South (or SE/NW or SSE/NNW);
runs from city centre/CBD/railway station to outer suburbs/fringe/Hucknall;
runs close to A610/A611 roads;
winding route/not straight etc.

3 @ 1 mark [3]

(ii) Benefits such as:
less air pollution so people have less breathing difficulties etc.
quick journey to city centre;
carries large numbers of people;
reduces number of cars on road/less congestion;
links with other transport hubs/railway station/bus station;
cheaper than using car/having to park;
people who cannot drive/under 16s can use it;
people can work/read/check emails/texts while using it etc.

Problems such as:
noise for residents living near it;
houses affected by vibrations from trams;
could slow down traffic using roads where there are tram lines;
disruption/noise/dust during construction;
can only serve limited area/resident in areas not served may object;
timetable restrictions/don't turn up on time/unreliable;
crowded/no seats etc.

MAX 3 on benefits/problems

5 @ 1 mark or development   [5]

(c) Levels marking

Level 1 (1–3 marks)
Statements including limited detail which simply describe how urban sprawl has changed surrounding area.
(e.g. building of housing estates, more road building, industrial estates built, farmland built on, air pollution, loss of woodland etc.)

Level 2 (4–6 marks)
Uses named example
More developed statements which explain how urban sprawl has changed surrounding area.
(e.g. building of housing estates so urban area takes up farmland, more roads around city increases air pollution, industrial estates built therefore loss of woodland etc.)

NB MAX 5 if no named or inappropriate example

Level 3 (7 marks)
Uses named example (e.g. Nottingham).
Comprehensive and accurate statements which explain how urban sprawl has changed surrounding area with some place specific reference.
(e.g. building of housing estates around Bingham so urban area takes up farmland, more roads around city such as A52 increases air pollution, industrial estates built at Bulwell therefore loss of woodland etc.)   [7]

[Total: 25]

3 (a) (i) V – shaped/steep sided

1 mark [1]

(ii) Ideas such as:
irregular long profile/waterfalls/rapids;
debris in channel/rocky;
shallow/low depth;
narrow;
turbulent/white water;
winding/twisting;
low volume/small etc.

2 @ 1 mark [2]

(iii) hydraulic action/weight/power of water/loosening of unconsolidated/soft materials/ pressuring of air in cracks;
abrasion/corrasion/river uses load it is carrying to erode/sandpapering action etc.
corrosion/solution/chemicals/acids in water/dissolve rocks;
attrition/particles hitting each other are reduced in size

Accept either name of process or description

3 @ 1 mark [3]

(iv) materials being pushed/rolled along (**traction**);
materials being picked up by water and bounced along the bed/series of hops (**Saltation**);
materials suspended/carried within the water (**Suspension**);
materials dissolved in the water (**Solution**)

2 + 2 marks for name of method and matching description

4 @ 1 mark [4]

(b) (i) Ideas such as:
seeds fall into cracks in rocks;
plants/roots grow in cracks;
cracks widened/stress exerted;
rocks broken apart;
organic acids help decomposition of rocks etc.

3 @ 1 mark [3]

(ii) Ideas such as:
rate of chemical weathering doubles with every rise of 10 °C;
as there is presence of water for solution (dev);
large amounts of rainfall which is acidic due to natural reaction between carbon dioxide and oxygen cause more chemical weathering;
more biological weathering as there is far more plant/tree growth;
therefore there will be more animals to cause biological weathering (dev) and more likelihood of tree roots in cracks/organic acids etc. (dev);
more rapid release of CO_2 from decay of plants etc.

5 @ 1 mark or development   [5]

(c) Levels marking

Level 1 (1–3 marks)
Statements including limited detail describing the process of freeze-thaw weathering.
(e.g. rain collects in cracks/joints, temperature falls, water freezes, water expands, stress on cracks/joints, joints opened, melting, more water enters the joints/repetition etc.)

Level 2 (4–6 marks)
More developed statements explaining the process of freeze-thaw weathering.
(e.g. temperature falls causing water to freeze, water expands and puts stress on cracks/joints/opens joints, more water enters the joints so process is repeated etc.)

Candidates can reach full L2 without diagram – only MAX 6 if diagram is missing, not labelled or inadequate.

Level 3 (7 marks)
Comprehensive and accurate statements describing/explaining the process of freeze-thaw weathering including appropriate labelled diagrams (s).   [7]

[Total: 25]

4 (a) (i) 45/46 metres

1 mark [1]

(ii) Clearing;
Crops/cassava/manioc/banana/fruit/people are growing/planting vegetation

2 @ 1 mark [2]

(iii) Ideas such as:
layers;
dense/lush/thick;
lianas;
evergreen;
drip tips;
canopy/under canopy/shrub layer;
emergents/tall trees;
straight trees;
large variety of species;
broad/large leaves;
buttress roots;
shallow roots;
few branches/leaves on lower trunk/all near top of trees;
little undergrowth (or lots in clearings/river banks) etc.

3 @ 1 mark [3]

(iv) Ideas such as:
abundant vegetation due to hot/wet climate;
evergreen due to lack of a cold season/limited seasonal change;
drip tip leaves to repel heavy rain;
waxy coatings of leaves to repel heavy rainfall;
emergents reach for sun;
lianas wind around trees reaching from sun;
buttress roots to support trees as they are so tall/may be affected by the wind;
shallow roots as only the top layer of soil is fertile;
variety of species as growing conditions are ideal/hot/wet;
large leaves to catch maximum sunlight;
there are few branches on lower trunks as sunlight cannot reach them etc.

4 @ 1 mark [4]

(b) (i) Ideas such as:
leaves/twigs fall to ground;
turned into humus/decompose;
humus mixed with soil;
nutrients returned to plants/taken up by roots

3 @ 1 mark [3]

(ii) Ideas such as:
loss of habitats;
death of animals/loss of species;
possible extinction;
reduction in biodiversity;
lack of food for herbivores;
carnivores will have nothing to prey on;
soils will be less well drained/compacted;
as a result of lack of interception/protection by vegetation;
shorter lag time;
so flooding is more likely;
soil erosion/mudslides may occur;
so soil settles on river bed/displaces water;
leaching occurs/soil becomes infertile;
nutrient cycle broken;
noise from machinery disturbs wildlife;
trees don't regrow/secondary forest is not so dense;
local atmospheric pollution or example etc.

5 @ 1 mark or development [5]

(c) Levels marking

Level 1 (1–3 marks)
Statements including limited detail describing the ways rainforest benefits people.
(e.g. hunting, gathering, rubber tapping, uses carbon dioxide, provides oxygen, logging, medicines, tourism etc.)

Level 2 (4–6 marks)
Uses named example
More developed statements describing the ways rainforest benefits people.
(e.g. Tribal groups provide food for themselves by hunting and gathering, rubber tapping takes place and latex is manufactured into rubber for export, converts carbon dioxide into oxygen, various species of hardwoods are logged etc.)

NB MAX 5 marks with no named or inappropriate e.g.

Level 3 (7 marks)
Uses named example (e.g. Amazonia).
Comprehensive and accurate statements describing the ways rainforest benefits people, including some place specific reference.
(e.g. Tribal groups such as Erigbaagtsa provide food for themselves by hunting and gathering, rubber tapping takes place in areas close to Amazon river and latex is exported from Manaus, converts carbon dioxide into oxygen, various species of hardwoods such as mahogany are logged etc.) [7]

NB Accept appropriate country name as example

[Total: 25]

5 (a) (i) 26

1 mark   [1]

(ii) A Poland

B Singapore

2 at 1 mark   [2]

(iii) Ideas such as:
in Europe reduction in percentage of manufacturing but in Asia increase in percentage of manufacturing (1 mark reserve);
industrial growth/investment taking place/multi-National locating in Asia;
cheap labour in Asia/LEDCs;
labour intensive factories in Asia/LEDCs;
mechanisation/technology in Europe/MEDCs;
easier/cheaper for Europe/MEDCs to import manufactured goods;
expansion of service employment in Europe/MEDCs;
industrial decline in Europe.

3 @ 1 mark   [3]

(b) (i) Ideas such as:
unevenly distributed/clustered;
more/3 areas on coast/edge/border;
more/3 areas in south;
1 area in north/centre/away from coast;
close to railways etc.

3 @ 1 mark   [3]

(ii) Ideas such as:
proximity to roads for transport of raw materials;
proximity to roads for transport of finished products;
close to densely populated areas/cities for markets;
in cities where there is a large labour force;
close to coast/ports for export/import of products etc.

4 @ 1 mark   [4]

(iii) Advantages such as:
employment/close to work/higher pay;
multiplier effect;
more money circulating in area;
improvements to standard of living/quality of life/services or examples (e.g. afford more food/education/health care etc.)
development of transport network;
development of infrastructure/electricity/water supply;
provision of housing by company etc.

Disadvantages such as:
atmospheric pollution/smoke/smell causes breathing difficulties/unpleasant conditions for people to live in;
pollution of drinking water supplies;
visual impact;
noise;
traffic congestion etc.

5 @ 1 mark or development   [5]

NB MAX 3 marks on advantages/disadvantages

(c) Levels marking

Level 1 (1–3 marks)
Statements including limited detail describing impacts on natural environment of manufacturing industry

(e.g. causes air pollution, pollutes rivers, causes global warming etc.)

Level 2 (4–6 marks)
More developed statements describing impacts on natural environment of manufacturing industry

(e.g. causes air pollution killing species of insects, pollutes rivers therefore reducing biodiversity, gives off carbon dioxide therefore causing global warming etc.)

NB MAX 5 marks with no or inappropriate e.g. (Country name not acceptable here)

Level 3 (7 marks)
Uses named example (e.g. manufacturing industry in Cubatao in
Sao Paulo State, Brazil).
Comprehensive and accurate statements describing impacts on natural environment of manufacturing industry, including some place specific reference.
(e.g. fumes from industries such as a fertiliser factory/a cement works/there are about 30 major industrial facilities in the vicinity; 473 tons a day of carbon monoxide; 182 tons a day of sulphur; 148 tons of polluted dust and particles; 41 tons of nitrogen oxide; causes air pollution killing species of insects, pollutes rivers therefore reducing biodiversity, gives off carbon dioxide therefore causing global warming; etc.)   [7]

NB Environmental impacts can be at any scale.

[Total: 25]

6 **(a)** **(i)** Rokei/Moa

1 mark [1]

(ii) Ideas such as:
fights/disputes/arguments over the use of its water;
people in one country using more than their fair share of water;
country upstream may pollute it and make it useless for country downstream;
damming of river upstream reduces downstream supply;
using water for irrigation in one country reduces availability of it in another;
building a dam in one country reduces deposition of sediment downstream;
access along the river is reduced.

2 @ 1 mark [2]

(iii) Ideas such as:
there is more clean/drinking water/the body needs water/cannot function without water/prevent dehydration;
reduction of diseases/cholera, typhoid/hygiene is improved etc.;
people more able to work/able to produce food/earn money;
more water for irrigation for use in agriculture/increases yields of crops;
people do not have to spend so much time collecting water/do not have to walk as far etc.

3 @ 1 mark [3]

(b) **(i)** Ideas such as:
to move/transfer water;
uneven distribution of rain in Spain/wetter in north than south/dry in south;
so there is enough water in areas with high demand or example (e.g. tourist areas)

3 @ 1 mark [3]

(ii) Ideas such as:
desalination/taking salt from sea water;
using the underground water/aquifer/wells;
building reservoirs;
cloud seeding;
importing water supplies;
use of tankers etc.

4 @ 1 mark [4]

(iii) Ideas such as:
treatment of waste water;
regulations on/prevention of pollution of rivers;
and strict enforcement;
use water more carefully/people should not waste water;
hosepipe bans;
use of water meters;
as paying for water makes people more careful;
use showers not baths;
put brick in toilet cistern;
turn off taps when not in use;
roof top tanks/water butts etc.;
mend leaking pipes;
more careful use of irrigation or example;
educate/make people aware of water conservation

4 @ 1 mark or development   [5]

(c) Levels marking

Level 1   (1–3 marks)
Statements including limited detail describing one way in which energy is produced.
(Candidates can refer to any type of energy or scheme)

Level 2   (4–6 marks)
Uses named example
More developed statements describing one way in which energy is produced.
(e.g. Candidates can refer to any type of energy or scheme – development may be in the
form of reference to methods of production, locational factors or statistical detail)

NB MAX 5 if no named or inappropriate example.

Level 3   (7 marks)
Uses named example (e.g. UK).
Comprehensive and accurate statements describing one way in which energy is produced
including some place specific reference.
(Place specific information could include named locations or statistical details)   [7]

[Total: 25]