



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

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**GEOGRAPHY**

**0460/01**

Paper 1 Geographical themes

**For Examination from 2016**

SPECIMEN MARK SCHEME

**1 hour 45 minutes**

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**MAXIMUM MARK: 75**

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This document consists of **14** printed pages.

## 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.

**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 achieves 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 place specific information.

### 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 (7 marks)

- 1 (a) (i) The north/20 °N or higher/North of Timbuktu/north of 100 mm isohyet/any correct latitude and longitude coordinates  
1 mark [1]
- (ii) Features such as:  
areas with over 400 mm rain/higher rainfall;  
south (west) of country;  
between 10–15 (18) degrees N;  
close to river (Niger);  
in or around urban areas (or named egs)/close to airport; etc.  
2 @ 1 mark [2]
- (iii) Ideas such as:  
variations in water supply/the south has more water than the north;  
thus lack of domestic/agricultural water supply in some areas (dev);  
possible variations in terrain/the valley of the river Niger is an attractive area to settle;  
as it may offer the best land to build settlements (dev);  
communications (dev) most fertile land (dev);  
some areas may be better served by communications/airport;  
southern parts have more opportunities for trade; as they are closer to boundaries of more countries (dev);  
rural urban migration/urbanisation; because there are better health facilities or other pulls/pushes (dev);  
variation in natural resource availability; etc.  
3 @ 1 mark or development [3]
- (b) (i) BR – DR/46.77 minus 19.05 (1<sup>st</sup> mark)  
plus or minus net migration/–0.33 (2<sup>nd</sup> mark)  
Correct calculation = 27.39 (3<sup>rd</sup> mark)  
3 @ 1 mark [3]
- (ii) Ideas such as:  
little availability of/no contraception;  
not educated about contraception;  
not likely to be able to afford contraception;  
likely to want children to work on the land;  
likely to want children to send out to earn money;  
likely to want children to look after parents in old age;  
not likely to be affected by government policy to reduce family size;  
likely to have large families due to tradition/sign of virility/wanting a boy;  
likely to have large families due to religious influences;  
early marriage;  
women not educated/lack of female emancipation/women do not have careers;  
widespread prostitution;  
high infant mortality; etc.  
4 @ 1 mark or development [4]

(iii) Maximum of 4 marks on describe/suggest reasons:

**Describe:**

Rising up to 2002;

Decline from 2002 (or over whole period);

Further 2 MAX for use of statistics (e.g. overall drop of 1.57 from 2000 to 2005)

**Reasons** such as:

better treatment of diseases/or examples (up to 2002);

improved health care facilities/or examples (up to 2002);

investment in care homes/services for elderly (up to 2002);

improved diet/increased food production (up to 2002);

better water supply/sanitation (up to 2002);

impact of AIDS (2002 onwards);

(civil) war (2002 onwards);

drought (2002 onwards) etc.

5 @ 1 mark or development

[5]

(c) Levels marking

Level 1 (1–3 marks)

Statements including limited detail which suggest reasons for international migration.

(e.g. more/better jobs; better services; not enough food; war; drought etc.)

Level 2 (4–6 marks)

More developed statements which explain reasons for international migration.

(e.g. more jobs in destination country where they can work in service sector/factories; greater access to schools/hospitals/clinics; can buy food from shops rather than rely on unproductive farmland; refugees fleeing from war torn areas in fear of their lives; drought prevents them from producing enough food to feed their families etc.)

Level 3 (7 marks)

3 or more developed statements + one named example with at least one piece of place specific detail (e.g. Turkey to Germany, more jobs in Germany where they were employed in rebuilding cities like Dresden after World War 2; greater access to schools/hospitals/clinics than in remote mountainous areas of Turkey; refugees fleeing from war-torn areas close to Iraqi border in fear of their lives; drought in regions such as central Anatolia prevents them from producing enough food to feed their families etc.)

[7]

**[Total: 25]**

- 2 (a) (i) Central Business District  
1 mark [1]
- (ii) One mark for a similarity and one for a difference.  
**Similarities** such as both:  
are on edge of city/away from centre;  
are close to A roads/within easy reach of motorway/M1;  
**Differences** such as:  
Meadowhall is closer to centre (in urban area)/Crystal Peaks is in a more rural location;  
Meadowhall is closer to motorway;  
Meadowhall is further north;  
Meadowhall near river/Crystal Peaks is not etc.  
2 @ 1 mark [2]
- (iii) Ideas such as:  
low cost land in rural area;  
plenty of space in rural area; for large car parks/expansion (dev);  
proximity to urban area for large numbers of customers;  
'A' road/motorway provides easy access for customers/delivery;  
away from congested area in CBD; etc.  
3 @ 1 mark or development [3]
- (b) (i) Photograph A = village  
Photograph B = city  
Photograph C = town  
3 @ 1 mark [3]
- (ii) Ideas such as:  
a diagram showing the size/importance of settlements/services/an arrangement of settlements by rank order;  
in any area there will be more low order settlements/villages than high order/cities;  
more services/variety of services are found in larger settlements/high order than small ones/low order;  
high order services in cities/high order settlements;  
high order settlements/cities have a larger sphere of influence;  
high order settlements/cities have a larger threshold population; etc.  
4 @ 1 mark [4]
- (iii) Ideas such as:  
people will travel further for higher order services;  
people will travel to buy specialist goods (or examples);  
people travel further to buy comparison goods rather than convenience goods;  
some services are likely to be used less/more frequently than others;  
some centres offer more shops/wider range/opportunity to shop around/get cheaper prices;  
people travel further for some services to seek better quality;  
some services may have a larger sphere of influence;  
some people live in settlements with fewer services than other people/people who live in villages have further to travel than city dwellers for many services; etc.  
(5 @ 1 or development) [5]

**(c) Levels marking**Level 1 (1–3 marks)

Statements including limited detail on likely effects on people or environment as a result of urban sprawl.

(e.g. traffic congestion; loss of farmland; atmospheric pollution)

Level 2 (4–6 marks)

More developed statements on likely effects on people or environment as a result of urban sprawl.

(e.g. traffic congestion as many people who live in new developments commute to work in CBD; loss of farmland due to new housing developments/road construction; atmospheric pollution from increased traffic etc.)

Level 3 (7 marks)

3 or more developed statements + named example (e.g. Nottingham) with at least one piece of place specific detail of effects on both people and environment of urban sprawl.

(e.g. traffic congestion on radial roads into city as many people who live in villages like Burton Joyce commute to work in the city; loss of farmland around Papplewick village due to new housing developments; atmospheric pollution from increased traffic along A60 etc.)

[7]

**[Total: 25]**

- 3 (a) (i)** 210–220 mm  
1 mark [1]
- (ii)** Highest temperature minus lowest temperature/34 – 8 °C (1<sup>st</sup> mark)  
= 26 °C (2<sup>nd</sup> mark)  
2 @ 1 mark [2]
- (iii)** Ideas such as:  
in USA;  
south/west/south west USA;  
close to border with Mexico;  
in state of California/Nevada/Utah/Arizona;  
SE California;  
SW Utah;  
NW Arizona;  
S Nevada;  
3 @ 1 mark [3]
- (iv)** Candidates should explain why deserts are hot and dry rather than simply describing their climatic features. Credit written answers or information included as part of labelled diagrams or sketch maps (do not double credit here). Expect reference to ideas such as:  
distance from oceans;  
absence of moderating influence of water body;  
wind direction/trade winds;  
blow over large areas of land hence no source of moisture;  
lack of evaporation;  
absence of cloud cover therefore hotter;  
influence of overhead sun;  
high pressure;  
rain shadow; etc.  
NB MAX of 3 marks if the answer focuses on only hot or dry  
4 @ 1 mark or development [4]
- (b) (i)** Features should be evident from photographic evidence. Ideas such as:  
scattered/sparse/not much vegetation/some area without vegetation;  
shrubs/bushes;  
cacti;  
plants with narrow/spiky leaves;  
little variety of vegetation; etc.  
3 @ 1 mark [3]
- (ii)** Ideas such as:  
low precipitation/aridity results in scattered/sparse vegetation;  
seeds/plants remain dormant during long dry spells;  
narrow/spiky leaves reduce rates of evapotranspiration/because of high temperatures;  
long roots/wide spreading roots search for water;  
some plants/cacti store water in order to survive long periods of drought; etc.  
5 @ 1 mark or development [5]

**(c) Levels marking**Level 1 (1–3 marks)

Statements including limited detail explaining how or why the area is at risk from human activities.

(e.g. trees are being chopped down; the area is used for farming; resources are mined in the area, animals are killed; it causes floods; it washes soil away; it makes the land bare etc.)

Level 2 (4–6 marks)

More developed statements explaining how or why the area is at risk from human activities.

(e.g. trees are being chopped down to export hardwoods; minerals such as copper are extracted from the area from opencast mines; the area is used for commercial farming and soils are exhausted; it kills animals threatening species with extinction; impacts on food chain; loss of habitat reduces variety of species; reduces interception therefore increasing run off and causing floods etc.)

Level 3 (7 marks)

3 or more developed statements + named example (e.g. Amazonia) with at least one piece of place specific detail.

Comprehensive and accurate statements explaining how and why the area is at risk from human activities.

(e.g. in Amazonia 1000s of species in the state of Mato Grosso are threatened with extinction; trees are being chopped down to transport down river from settlements like Manaus for export; raw materials such as iron ore are extracted from the opencast mines such as the Carajas mine; loss of habitat in marshy areas alongside River Amazon, reduces interception increasing runoff; causes floods as soil is washed into River Amazon and its tributaries, reduces soil fertility etc.)

[7]

**[Total: 25]**



- 4 (a) (i) Stort/Ash/Rib/Beane [1]
- (ii) ideas such as:  
 more tributaries have joined;  
 further distance downstream/X is nearer to mouth;  
 more water will have been added by run off;  
 more concrete surfaces around X so more runoff; etc.  
 NB no need for comparative statements.  
 2 @ 1 mark [2]
- (iii) Answer needs to be comparative or two discrete accounts.  
 ideas such as:  
 wider at X;  
 less V shaped at X;  
 more likely to have flood plain/flat land next to river at X;  
 steeper sides at Y; etc.  
 narrow at Y;  
 more V shaped at Y;  
 3 @ 1 mark [3]
- (iv) **Problems** such as:  
 flooding of roads;  
 flooding of farmland/damage to crops/death of farm livestock;  
 damage to houses/property/evacuation of residents;  
 damage to/flooding of businesses;  
 river may be polluted;  
 need to build bridges for transport/difficult to travel;  
 drowning/deaths;
- Benefits** such as:  
 water supply;  
 fishing;  
 irrigation/water for livestock;  
 recreational value;  
 sewage/waste disposal;  
 HEP;  
 transport; etc.  
 Max 2 on each of problems/benefits  
 2 + 2 @ 1 mark [4]
- (b) (i) hydraulic action – weight/power of water/loosening of unconsolidated/soft materials/pressuring of air in cracks; etc.  
 Corrasion – river uses load it is carrying to erode/sandpapering action etc.  
 Corrosion – chemicals/acids in water/dissolve rocks; etc.  
 3 @ 1 mark [3]
- (ii) Ideas such as:  
 rapid erosion of less resistant rock;  
 more resistant rock not worn away as rapidly;  
 power of falling water enlarges plunge pool;  
 undercutting of hard rock;  
 collapse of hard rock layer/lack of support;  
 waterfall retreats (to form gorge); etc.  
 5 @ 1 mark or development [5]

**(c) Levels marking**Level 1 (1–3 marks)

Statements including limited detail explaining how an oxbow lake is formed.  
(e.g. river cuts off a meander; erosion during floods; outer bend of meander eroded etc.)

Level 2 (4–6 marks)

More developed statements on how/why an oxbow lake is formed.  
(e.g. Outer bend of meanders eroded due to faster flowing water; neck of meander cut during time of flood; former meander sealed by deposition etc.)

NB Max 6 marks without diagram

Level 3 (7 marks)

Comprehensive and accurate statements explaining how and why an oxbow lake is formed, including appropriate labelled diagram(s).

- NB 1. Diagram must be labelled (or numbers + key) for L3 credit.  
2. Do not double credit text and annotation (other than allowing access to L3)

[7]

**[Total: 25]**

- 5 (a) (i) Keeping of animals (on farms)  
1 mark [1]
- (ii) A Waikato/Taranaki [1]  
B Hawke's Bay/Manawatu-Wanganui/Wellington/Southland [1]
- (iii) Ideas such as:  
in Taranaki less sheep are kept per sq km than in Hawke's Bay;  
in Hawke's Bay more beef cattle are kept per sq km than in Taranaki;  
in Taranaki more dairy cattle are kept per sq km than in Hawke's Bay;  
in Hawke's Bay beef cattle are most important but in Taranaki dairy cattle are most important  
in Hawke's Bay sheep are more important than in Taranaki  
3 @ 1 mark [3]
- (iv) Ideas such as:  
many parts of south island have an annual precipitation of over 2000 mm; which could cause waterlogging of pastures (dev);  
North island has milder/warmer (winter) temperatures;  
so grass will grow all year round (dev);  
animals can be grazed outside all year (dev);  
many parts of south island are mountainous; therefore slopes could be too steep for cattle (dev);  
soil/grass quality poor; etc.;  
4 @ 1 mark or development [4]
- (b) (i) Ideas such as:  
unevenly distributed/clustered;  
more on North Island;  
mainly in coastal areas;  
and near main cities; (or examples)  
especially on east coast of south island; etc.  
3 @ 1 mark [3]
- (ii) Ideas such as:  
proximity to areas producing meat products/pastoral farms;  
to reduce costs of transport (dev);  
as meat is perishable (dev);  
close to main markets in cities;  
where there is a larger labour force (dev);  
close to ports for export of produce; etc.  
5 @ 1 mark or development [5]

**(c) Levels marking**Level 1 (1–3 marks)

Statements including limited detail describing explaining how environment is at risk from economic development

(e.g. causes air pollution; kills wildlife; causes more traffic etc.)

Level 2 (4–6 marks)

More developed statements explaining how environment is at risk from economic development

(e.g. causes air pollution thus species are threatened; causes more traffic especially heavy lorries increased noise levels for residents etc.)

Level 3 (7 marks)

3 or more developed statements + named example with at least one piece of place specific detail (e.g. manufacturing industry in Cubatão in São Paulo State, Brazil). Latin America's biggest petrochemical complex, causes more traffic especially heavy lorries increased noise levels for residents; fumes from industries such as a fertiliser factory/a cement works/there are about 30 major industrial facilities in the vicinity; 473 tonnes a day of carbon monoxide; 182 tonnes a day of sulfur; 148 tonnes of polluted dust and particles; 41 tonnes of nitrogen oxide; the infant mortality rate is significantly higher than anywhere else in the country; about 8% of all children born in the area suffer from abnormalities such as spinal problems and missing bones; 44% of the Vila Parisi population have some kind of lung disease; no local smoke control regulations etc.

[7]

**[Total: 25]**

- 6 (a) (i) Romania  
1 mark [1]
- (ii) Generally positive relationship/higher GDP per capita greater percentage have access to safe water (1<sup>st</sup> mark reserved);  
**Either** two countries with accurate figures for illustration  
**or** reference to anomaly/e.g. China much higher percentage safe water than expected for GDP;  
2 @ 1 mark [2]
- (iii) Answer does not need to be comparative as comments about a country with a high percentage of safe water implies a comparison. Expect reference to ideas such as:  
amount of precipitation;  
evaporation levels/temperatures;  
level of development of water supply infrastructure/dams/reservoirs/pipes/taps;  
ability to treat/recycle water;  
development of sewage/sanitation infrastructure;  
population density;  
presence/absence of rivers/natural lakes;  
presence/absence of water bearing rocks/aquifer;  
levels of pollution;  
being able to afford to import water; etc.  
3 @ 1 mark [3]
- (iv) Ideas such as:  
the body needs water/cannot function without water;  
otherwise dehydration occurs (dev);  
reduction of water-borne diseases;  
such as cholera, typhoid etc. (dev);  
leads to improvement of hygiene;  
lack of water can cause the body to become weak/having access to water keeps people healthy;  
therefore unable to work in order to produce food/earn money/walk long distances for fuel (dev);  
more water for irrigation for use in agriculture;  
is likely to increase yields of crops/produce more food (dev); etc.  
4 @ 1 mark or development [4]
- (b) (i) Ideas such as:  
long lasting drought/low rainfall;  
lack of dams/reservoirs/dependence on wells;  
large demand from tourist industry;  
water is wasted;  
3 @ 1 mark [3]

- (ii) Methods such as:  
 dam/reservoir/pipeline building;  
 desalination plants;  
 more boreholes/wells;  
 cloud seeding;  
 rationing;  
 increase cost of water;  
 cover wells;  
 afforestation;  
 treatment plants/use grey water/recycling;  
 import water; etc.  
 specific examples of water conservation methods to max 2;  
 5 @ 1 mark or development

[5]

(c) Levels marking

Level 1 (1–3 marks)

Statements including limited detail explaining why tourism has developed in an area, referring to physical and/or human attractions.

(e.g. a hot climate; scenic beauty; beaches; tropical vegetation; Interesting culture; historical buildings etc.)

Level 2 (4–6 marks)

More developed statements explaining why tourism has developed in an area, referring to physical and/or human attractions.

(e.g. a hot climate with summer average temperatures at least 25 °C; sandy beaches; clear blue seas; tropical vegetation with palm trees; historical buildings such as cathedrals etc.)

Level 3 (7 marks)

3 or more developed statements + named example (e.g. Mallorca) with at least one piece of place specific detail.

Comprehensive and accurate statements explaining why tourism has developed in an area, referring to physical and human attractions.

(e.g. a Mediterranean climate with hot, dry summers with average temperatures at least 25 °C and mild winters with no frost and snow; sandy beaches at resorts like Alcudia; historical buildings such as the cathedral at Palma; theme parks/water parks etc.)

[7]

**[Total: 25]**