

# Mark Scheme (Results)

## Summer 2007

GCSE B

### GCSE Geography (1313) Paper 4H

## 1313/4H Summer 2007

- A1 (a) i)** Africa (1)  
South America (1)  
Europe (1) 3 marks
- ii) It decreased by less than 2% 1 mark
- iii) LEDCs 1 mark
- (b) i)** 22 1 mark
- ii) Country B 1 mark
- iii) High birth rate (1)  
High/medium death rate (1)  
High rate of natural increase (1) 2 marks
- (c) Health care**  
Babies are immunised against diseases (1) and hygiene is improved (1)  
so infant mortality is reduced (1)  
and parents have less incentive to have a large family (1)
- Accept contraceptives are available (1) and affordable (1)  
and people understand their use (1)  
so women are less likely to get pregnant (1)
- Education for girls**  
Educated girls are likely to be more ambitious/qualified (1) and want a career (1)  
so they marry later (1) and start a family later (1)
- Accept education about sex/contraceptives (1) so women less likely to get pregnant (1)  
Also accept education about the advantages of having smaller families (1)  
so women less likely to get pregnant (1) 3 marks  
Accept abortion or sterilisation as alternative to contraceptives.
- (d) i)** 22 (1)  
78 (1) 2 marks
- ii) MEDCs are richer than LEDCs (1)  
so people use more energy in their homes (1)  
and own more cars (1)  
MEDCs are more industrialised than LEDCs (1) and have more technology (1)  
so use more energy in factories/offices/shops (1) and farms (1)
- Accept opposite points for LEDCs, but don't double mark. 2 marks
- (e) i)** Something that is useful (1)  
Something that is used by people (1) 1 mark  
Not accepting something that is needed
- ii) They are non-renewable (1)  
They are fixed/finite in quantity (1) 1 mark
- iii) 2062 1 mark

- iv) New reserves/deposits were discovered (1)
- New technology made some 'difficult' deposits recoverable (1)
- Higher prices made some previously uneconomic deposits worthwhile to exploit (1)
- Re-cycling of iron/aluminium prolonged the life of metal reserves (1)
- Alternative/substitute energy sources were developed (1)
- Rates of consumption grew more slowly than expected (1)
- New technology allowed more efficient use so less energy was used/needed (1)

3 marks

(f)

<p><b>Level 1</b> <b>3 marks</b></p>	<p>States the location of the project simply: e.g. Names the country it is located in. Mentions one or two environmental effects: e.g. Biogas plant recycles organic matter; biogas plant may be an eyesore; solar power plant doesn't make any noise; solar energy is sustainable.</p>
<p><b>Level 2</b> <b>6 marks</b></p>	<p>Describes the location briefly: e.g. Names a nearby town/village and the country it is in, OR identifies the type of area (e.g. rural; desert) and the country it is in. Explains one or two environmental effects simply: e.g. Biogas plant recycles waste organic products like animal dung to make fertiliser; biogas plant produces methane, a greenhouse gas; solar power plant does not burn fuel so there are no carbon emissions.</p> <p>To reach the top mark: Writes in sentences with a clear and structured style. Spells, punctuates and uses the rules of grammar with some accuracy.</p>
<p><b>Level 3</b> <b>8 marks</b></p>	<p>Describes the location in some detail (probably by a sketch map): e.g. Shows its distance and/or direction from other feature(s), such as a town, river, sea, mountain range. Explains a few environmental effects thoroughly: e.g. knock-on effects.</p> <p>To reach the top mark: Writes in sentences that are clear, structured and coherent. Spells, punctuates and uses the rules of grammar with considerable accuracy, using specialist terms appropriately</p>

Max.6 marks if country not named or a large-scale scheme is used

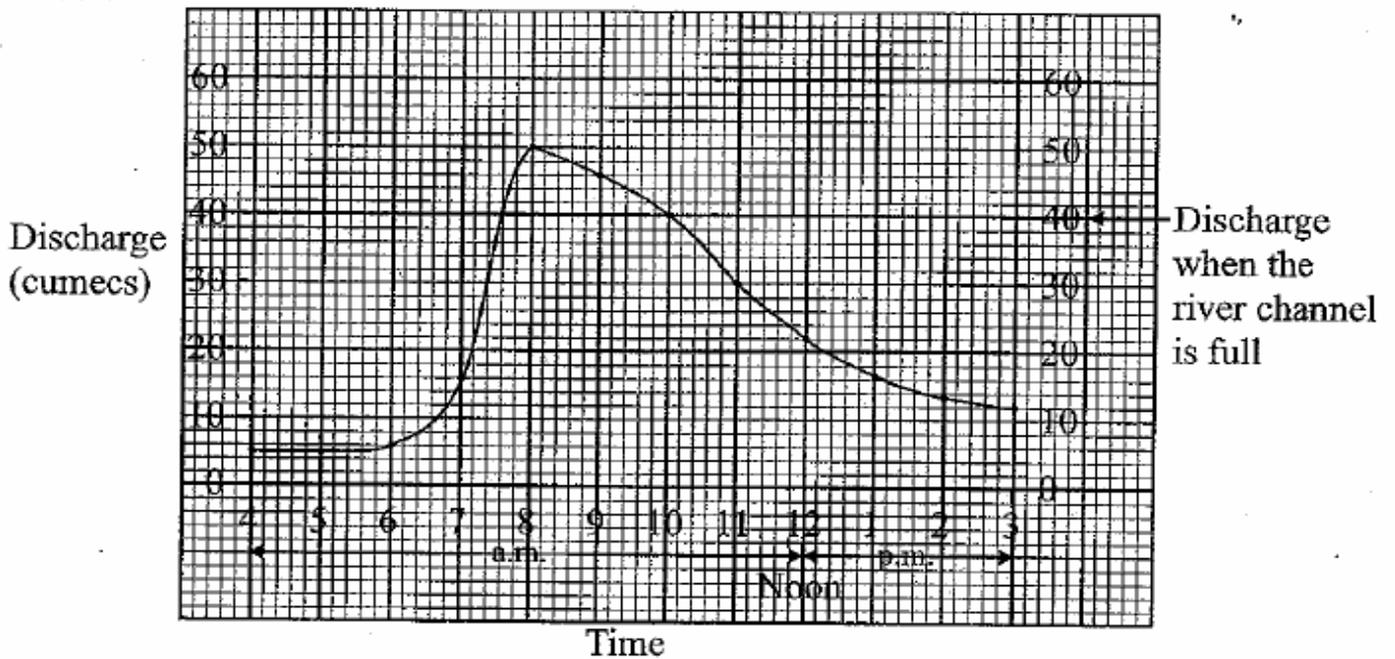
Max.3 marks if MEDC used.

In part (i) credit location of the project, not location of the country.

8 marks

Total 30 marks

A2 (a) i)



The storm (heavy rain) started at 5a.m. and lasted for 20 minutes.

Three or four accurate plots - 2 marks; one or two accurate plots - 1 mark  
Accurate smooth connecting line, provided there are four accurate plots (1)  
2 + 1 = 3

3 marks

ii) 50

1 mark

(b) i) Any time between 7.45 and 7.50 (am)  
Accept e.g. just after 7.45 (am)

1 mark

ii) It was then that the discharge rose above 40 cumecs / bankfull level / the level when the river channel was full/the dashed line on the graph.

NOT accept "the discharge started to increase rapidly then"

1 mark

(c) Cars battered/swept along/piled up (1) or bushes uprooted (1)  
due to the force/speed of the floodwaters (1)

Mud in restaurant/on furniture/over floor (1)  
due to transport/deposition by the floodwater (1)

2 + 2 = 4

4 marks

(d)

Level 1 2 marks	Mentions one or two factors lifted from Diagram 1. e.g. 50 mm rain fell in 1 hour; ground was saturated; ground is steep; trees washed under bridge.
Level 2 4 marks	Elaborates on, or explains simply, one or two of the factors shown on Diagram 1. e.g. Intensive / torrential rainfall fell; the saturated ground prevented infiltration; the steep slopes caused rapid run-off; trees washed under the bridge formed a dam.
Level 3 marks	Elaborates on, or explains simply, three of the factors OR includes a thorough explanation of at least one factor: e.g. Ground was already waterlogged from previous rain, so it could not absorb any more; steep slopes caused rapid surface run-off, so rainwater reached the river channels quickly; trees washed under bridge formed a temporary dam, holding water back and leading to even bigger flood.

5 marks

**(e) Building levees**

Increases the size of the channel (1) by raising the height of the banks (1)  
so channel can hold a larger discharge (1) before it overflows (1)

**Building a dam**

Evens out the flow of the river (1) by storing water behind the dam/in a reservoir (1)  
when the discharge is high (1)  
so reduces the discharge the downstream channel has to hold (1)

Max 3 marks on one method

4 marks

(f) i) They are hard engineering method (1)

They interfere with (or work against) nature (1) or Accept not natural (1)

They may make flooding worse in the long term (1) if dam/levee bursts (1)

A concrete levee/dam looks unattractive/unnatural (1)

A dam causes loss of land/wildlife under the reservoir (1)

Flooding can enhance the soil for agriculture (1)

Can score both the marks for two disadvantages of one method

2 marks

ii) Avoid building on flood plains (1)

Retain or restore wetlands/washlands (to absorb floodwaters) (1)

Afforestation or plant forests/trees (in the catchment) (1)

Introduce a flood warning system (1)

Use sandbags when a flood threatens (1)

NOT accept straightening/widening/deepening channel or any hard engineering method

1 mark

(g)

<b>Level 1</b> <b>3 marks</b>	Briefly defines or describes one or two physical processes: e.g. erosion wears away the rock; LSD moves sand along the beach; cliffs dry out and crack; landslides occur on the cliffs. Mentions one or two management methods: e.g. seawall, rip-rap, gabions, revetment, groynes, beach recharge/nourishment, cliff grading.
<b>Level 2</b> <b>6 marks</b>	Describes one or two processes in some detail: e.g. Distinguishes between corrasion and hydraulic action; Describes how freeze-thaw or solution weathering occurs; Identifies a few types of mass movement such as mudflow, slump or rockfall; states direction of LSD and links this to Prevailing winds. Explains simply how one or two management methods work: e.g. Groynes check LSD and so encourage beach build-up; rip-rap protects cliff from erosion by absorbing wave energy; drainage pipes in cliffs reduce lubrication and slumping.  To reach the top mark: Writes in sentences with a clear and structured style. Spells, punctuates and uses the rules of grammar with some accuracy.
<b>Level 3</b> <b>8 marks</b>	Describes the processes thoroughly: e.g. rain soaks into permeable rock above impermeable layer leading to rotational slumping; oblique winds cause a zigzag swash/backwash and thus LSD. Possibly shows how the processes inter-connect: e.g. LSD washes beach away and leaves cliffs exposed to erosion; cliff-foot erosion undermines cliff-face and this causes rock-falls. Explains management method(s) used in detail. Includes some place-specific detail: e.g. geology of cliffs; rates of erosion; names of resorts/facilities protected.  To reach the top mark: Writes in sentences that are clear, structured and coherent. Spells, punctuates and uses the rules of grammar with accuracy, using specialist terms appropriately.

Max. 6 marks if coastal area not named

8 marks

Total 30 marks

**B3** (a) i) Any figure between 250 and 260 (1)  
Any figure between 3.5 and 4.5 (1) 2 marks

ii) High land (1) so rainfall will be heavy (1)  
and water is easily piped downhill to settlements (1)  
Outside a National Park (1) so is not in a protected area (1)  
Sparsely populated area (1) so low pollution risk (1)  
Three other neighbouring reservoirs (1) suggest impermeable rock (1)  
Three streams supply water to it (1) so quite a large catchment (1)  
Farmland in upland area is low value land (1) 4 marks

b) Loss of land/farmland (1)  
Loss of homes/villages (1)  
Loss of plants/animals/wildlife (1)  
Loss of scenic value (1) OR eyesore (1)  
Fear of dam breaking and causing a flood (1) 3 marks

(c) i) Leaked/washed (from farm/fields) into streams feeding the reservoir (1)  
Spray (on farm/fields) blown by wind into reservoir (1) 1 mark

ii) Water unsafe to drink (1)  
Need to treat/clean up water (1)  
which is expensive (1) and not sustainable in long run (1)  
Reputation of company harmed (1) 2 marks

iii) Fines for farmers polluting water (1)  
Education of local farmers about good pesticide practices (1)  
e.g. Don't spray in windy conditions (1)  
Don't spray when heavy rain is expected (1)  
Don't spray if ground is frozen or waterlogged (1)  
Provide no-spray buffer zones close to water (1)  
Store pesticides carefully to prevent leaks (1)  
Dispose of containers and waste chemicals safely (1)  
Encourage switch to organic farming (1)  
Farmers use crop rotation to protect against pests (1) 2 marks

(d)

Level 1 2 marks	Mentions one or two reasons for rising water demand: e.g. population growth; rising living standards; urban growth; growth of manufacturing; intensification of farming; growth of leisure industry. Mentions a simple problem/solution: e.g. not enough water; need for more reservoirs
Level 2 4 marks	Explains one or two reasons in some detail: e.g. Increased ownership of domestic appliances like dishwashers; migration of people from rural areas requires piped water supplies in cities; provision of a piped water supply can encourage wasteful use of water; irrigation of desert areas to increase food supplies; more water needed for tourist resorts built in semi-arid areas. Mentions a few problems/solutions: e.g. water shortages, over-extraction, depletion of supplies; need to import water, build more reservoirs, recharge aquifers or conserve water
Level 3 6 marks	Gives a range of reasons and explains one or more in detail: e.g. Greater wealth in MEDCs is increasing domestic use of water in Jacuzzis and swimming pools; industrialisation of LEDCs is increasing demand for water for cooling, cleaning and as a raw material. Mentions a range of problems/solutions, or gives some details on one or two: e.g. conserve water by introducing water meters and hosepipe bans.

Max. FOUR marks for reasons with no reference to increasing use.

Place-specific details are not required but should be credited if given.

6 marks

Total 20 marks

B4 (a) i) Hot and dry

1 mark

ii) High temperatures for most of the year (1)  
OR high average yearly temperature (1)  
suggest strong radiation/sunlight received (1)  
Low annual rainfall (1) and large temperature range (1)  
suggest there are few clouds (1) to block the sun's rays (1)

3 marks

(b) i) Any figure between 320 and 340 (1)  
Any figure between 1.5 and 2.5 (1)

2 marks

ii) On high ground (1) so it will be exposed to strong winds (1)  
Outside a National Park (1) so it is not in a protected area (1)  
Near a road (1) so maintenance of the turbines will be easier (1)  
On farmland (1) that is unlikely to be of high value (1)  
Few houses nearby (1) so causes less nuisance from noise (1)

Max. 3 marks for undeveloped (half) answers.

4 marks

(c) Site X is in a built-up/housing area (1) and site Y is in an open space (1)

Plus max. 3 marks for meteorological points:-

Calm conditions meant surface differences affected air temperatures (1)  
Houses/buildings at X generate heat/use central heating (on a winter's day) (1)  
and some is released into the air (1)  
Cars/vehicles on roads at X generate heat (1)  
Vegetated surface at Y absorbs less solar energy (1)  
Evapo-transpiration from vegetation at Y has a cooling effect (1)

NOT accept cooling effect of wind at Y  
or heat reflected off buildings in X

2 + 2 or 1 + 3 = 4

4 marks

(d)

<b>Level 1</b> <b>2 marks</b>	Mentions that higher temperatures have been recorded recently and probably that ice sheets are melting. May mention changes in other associated weather features: e.g. more storms, more droughts, more floods. Probably does not comment on reliability of the evidence other than to say there is a lot of evidence.
<b>Level 2</b> <b>4 marks</b>	Mentions a range of direct and/or indirect evidence, or describes one or two pieces of evidence in some detail: e.g. Gives a basic statistic on the recent rise in temperatures (e.g. 10 warmest years on record occurred in last 15 years); comments on the more frequent recent use of the Thames Flood Barrier; or points to recent glacial retreat in the Himalayas/Greenland/Mt Kilimanjaro etc. May explain simply how weather features like storms and droughts are linked to global warming. gives a simple point about the reliability of the evidence: e.g. States that most scientists now accept global warming is occurring and caused by greenhouse gas emissions; or that the evidence (such as glacial retreat) is not localised but found in many parts of world.
<b>Level 3</b> <b>6 marks</b>	Describes/explains some evidence in detail: e.g. Gives statistics on the scale of recent temperature rises and increases in carbon emissions; shows how aerial photos/satellite images are used to monitor the retreat of glaciers; or indicates how cores of Antarctic ice provide information on past CO <sub>2</sub> levels and air temperatures. Comments on the reliability of the evidence with some understanding: e.g. Refers to reports by named groups of scientists (e.g. IPCC); comments on anomalous climatic statistics; mentions possible causes of warming other than greenhouse gas emissions (e.g. sunspot activity); or mentions possible bias of dissenting voices due to their political affiliations/source of funds.

6 marks

Total 20 marks

C5 (a) i) Clearance/cutting down of forest (1)  
Cutting down trees on a large scale (1)

Do not accept just "cutting down trees"

1 mark

ii) Soya is a profitable crop (1)

Brazilian government gives incentives for soya production (1)

Grown for export to Europe and China (1)

1 mark

iii) It has enormous biodiversity (1)

It plays a major role in the world's climate (1)

Plants may provide cures for diseases (1)

It is being destroyed at a fast rate (1)

2 marks

(b) i) A few/scattered trees (1) OR woodland (1) Not accept forest

Tall trees (1) with thin trunks (1) and no lower branches (1)

Layer of smaller trees OR undergrowth of bushes/shrubs (1)  
which is thick/covers the ground (1)

2 marks

Accept references to emergent layers (1) and canopy (1)

ii) Channels/gulleys/ditches/hollows (1)

Hummocks/mounds/small hills (1)

Accept ground is bumpy/uneven etc (1)

1 mark

Not accept just hilly

iii) Running water

1 mark

(c) i) Removal of forest prevents interception of rain (1)

and exposes the ground to rainfall (1)

which is more forceful than water dripping off vegetation (1)

Infiltration is reduced (1) with the lack of leaf litter on ground (1)

Surface run-off increases (1), especially on sloping ground (1)

Accept an answer referring to wind erosion:

Removal of trees means roots no longer bind soil (1)

and soil dries out with less shade (1)

Loss of humus from leaf-fall (1)

destroys soil structure/makes soil more crumbly (1)

Ground is no longer sheltered by trees (1)

Wind blows away loose soil (1)

3 marks

ii) Steep slopes are difficult to cultivate/grow crops on (1)

especially with machinery (1)

Soil will be eroded/washed away (1)

so little vegetation for animals to graze on (1)

Soil will be starved of humus/nutrients from leaf-fall (1)

leaving the ground infertile (1) and causing reduced crop yields (1)

Farmers may have to abandon their damaged land (1)

Cost a lot to restore the land (1)

Difficult to walk/travel over the land (1)

3 marks

(d)

<b>Level 1</b> <b>2 marks</b>	entions one or two simple effects: e.g. burning stubble damages soil; chemicals cause pollution; pesticides kill wildlife; removing hedges destroys habitats. y mention one or two reasons: e.g. to kill pests; to enrich soil; to grow more; to make more money.
<b>Level 2</b> <b>4 marks</b>	Explains in some detail one or two effects: e.g. burning stubble reduces humus content/increases erodibility of soil; chemical fertilizers can be washed into rivers and pollute them; chemical pesticides reduce biodiversity; removing hedges causes soil erosion by wind. Mentions three reasons or gives one reason in some detail: e.g. burning stubble cuts labour costs; chemical fertilizers produce higher yields; removing hedges enables large machinery to be used; demand for food is increasing.
<b>Level 3</b> <b>6 marks</b>	Explains in some detail a range of effects, or explains thoroughly one or two (e.g. how fertilizers cause eutrophication; how pesticides enter food chain). Gives two reasons in some detail, or explains one thoroughly (e.g. effects of EU subsidies on production).

Place-specific details are not required but should be credited if given

6 marks

Total 20 marks

- C6 (a) i) Protecting or saving (the environment / nature / wildlife) (1)  
Protecting from harmful change (1) 1 mark
- ii) To stop people poaching / killing animals (1)  
To limit the number of people entering the area (1)  
To minimise visitor pressure on fragile environment/habitat (1)
- NOT accept just "to stop people damaging the environment"  
or "because there are endangered species" 1 mark
- (b) i) It will encourage observation of/interest in wildlife (1)  
It will have solar power plants (1), which are a renewable energy source (1)  
It will breed tigers (1), which are an endangered species (1)  
Craft museum may support local traditions/sell local people's products (1)
- Give one mark for a statement giving the general idea of eco-tourism:  
e.g. reference to environmental-friendliness or sustainability 2 marks
- ii) Large scale development will have a negative impact on the environment (1)  
Building of hotels/beaches will destroy vegetation (1) and reduce habitat for wildlife (1)  
Building work/motor boats will disturb wild animals with noise (1)  
Construction of waterways will threaten mangrove ecosystem (1)  
and facilitate entry of poachers into the forest (1)  
Light from hotels will disturb wild animals at night (1)  
(Oil spills from) motorboats will pollute water (1)  
Motor boats will erode river banks (1)  
Sewage/detergents from hotels may pollute water (1)  
Tigers bred in captivity cannot be released into the wild (1)  
Large buildings etc will be eyesore (1)  
Tourist will drop litter (1) 3 marks
- (c) i) Jungle/thick forest (1)  
Tall trees (1)  
Shade under canopy (1)  
Mangrove trees (1)  
White bark (1)  
Large ferns/palm leaves (1)  
Thick undergrowth/tall shrubs (1)  
Plants/reeds growing in water (1) or vegetation to edge of riverbank 2 marks
- ii) Simple/basic/old (1)  
Small/room for two people (1)  
Made of wood (1) with canvas/cloth roof/shelter (1)  
Paddle-driven /non-motorised (1)  
Has a cabin (1) 2 marks
- iii) Sell fish to hotels/restaurants (1)  
Get employment in hotels (1) or as tourist guides (1)  
Denied access to some rivers for fishing (1)  
Fish stocks reduced by pollution of water (1)  
Fish disturbed by noise of speedboats (1)  
Lose land/home - displaced by building development (1)
- Credit positive and/or negative effects 3 marks

(d)

<b>Level 1</b> <b>2 mark</b>	Mentions attitude of one or two groups: e.g. farmers want to grow crops, tourists want to walk on land. Mentions one or two problems: litter, traffic congestion, air pollution, parking, erosion. Mentions one or two simple solutions: e.g. litterbins; signs, car parks.
<b>Level 2</b> <b>4 marks</b>	Describes one or two problems simply and identifies at least some of the conflicting groups involved: e.g. tourists drop litter on farmland causing harm to livestock; tourists annoy residents by taking parking spaces in village; motorcyclists annoy farmers by eroding footpaths; farmers annoy tourists by blocking off footpaths. Describes one or two solutions: e.g. introduce traffic management such as park and ride; publicize the country code; fence off and repair eroded paths.
<b>Level 3</b> <b>6 marks</b>	Describes a range of problems simply or a few in some detail, and identifies most of the conflicting groups involved: e.g. tourists buy up cottages for second homes and young locals cannot afford expensive housing; tourists drop tin cans in fields and farm machinery is damaged; tourists' dogs chase sheep - lambs are lost and the farmer loses money. Describes in some detail solutions that are clearly related to the identified problems: e.g. encourage building of cheap starter homes for local people; introduce park and ride to honeypot sites to reduce congestion and air pollution.

Place-specific details are not required but should be credited if given

6 marks

Total 20 marks