

Geography A (Short Course)

General Certificate of Secondary Education **1086-02**

Paper 2 (Higher Tier)

Mark Scheme for June 2010

OCR (Oxford Cambridge and RSA) is a leading UK awarding body, providing a wide range of qualifications to meet the needs of pupils of all ages and abilities. OCR qualifications include AS/A Levels, Diplomas, GCSEs, OCR Nationals, Functional Skills, Key Skills, Entry Level qualifications, NVQs and vocational qualifications in areas such as IT, business, languages, teaching/training, administration and secretarial skills.

It is also responsible for developing new specifications to meet national requirements and the needs of students and teachers. OCR is a not-for-profit organisation; any surplus made is invested back into the establishment to help towards the development of qualifications and support which keep pace with the changing needs of today's society.

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by Examiners. It does not indicate the details of the discussions which took place at an Examiners' meeting before marking commenced.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

© OCR 2010

Any enquiries about publications should be addressed to:

OCR Publications
PO Box 5050
Annesley
NOTTINGHAM
NG15 0DL

Telephone: 0870 770 6622
Facsimile: 01223 552610
E-mail: publications@ocr.org.uk

- 1 (a) **Study Fig 1a.** [2]
Name A and B which are shown on Fig 1a.
- A = Throughflow
B = Percolation
- 2 x 1 mark
- (b) **Study Fig 1b.**
- (i) **Describe two effects of the reservoir on the discharge of the river at X.** [2]
- reduces amount of discharge / less discharge
 - lowers peak discharge
 - increases lag time / delays discharge
 - results in more consistent flow level / more even discharge
 - controls / regulates discharge / flow / river / reduces flooding
- 2 x 1 mark
- (ii) **Fig 1b shows an area where the Forestry Commission is going to plant a large area of woodland.** [4]
Describe and explain the likely effects of this woodland on the discharge of the river at Y.
- Description (✓d)
- reduces amount of discharge / less discharge
 - delays discharge / increases time lag
 - more even discharge / results in more consistent flow level
 - lower peak discharge
 - change in river channel capacity
- Explanation (✓e)
- Evapo-transpiration / transpiration
 - interception
 - less surface run-off
 - more infiltration
 - more soil protection / less compression
 - less soil washed into river (Not soil erosion)
- 2 + 2 marks
- (c) **Many areas of housing have been built in river valleys. Explain why this is likely to increase river flooding.** [4]
- Ideas such as:
- amount of natural vegetation would be reduced
 - less water used by plants / less interception
 - less evapo-transpiration
 - surface run off would increase
 - more impermeable surfaces/tarmac/roads/concrete
 - groundwater flow would be more likely
 - reduced lag time / water goes to river more quickly / quicker surface run-off
 - artificial drains would encourage rapid water flow

- reduced infiltration / absorption by soil
- changed / straightened river course etc.

4 x 1 mark

- (d) **With the aid of a labelled diagram or diagrams, explain how a waterfall is formed.** [7]

Level 1 (1–3 marks)

Statements including limited detail which explain the formation of waterfall eg:

- waterfall formed by erosion
- presence of layer of hard rock across course of river
- hard rock and soft rock layers
- a plunge pool is formed.

Level 2 (4–6 marks)

More developed statements which explain the formation of waterfall eg:

- erosion of more resistant rock across course of river at a slower pace than rock around it
- soft rock erodes more easily than hard rock
- undercutting and collapse of overhanging hard rock
- retreat upstream

Level 3 (7 marks)

Comprehensive and accurate process specific statements/terminology or named example eg:

- erosion of more resistant rock by **hydraulic action/corrasion** across course of river at a slower pace than rock around it
- undercutting of hard rock layer which falls into **plunge pool**
- retreat upstream forming **gorge**
- rock type e.g. **millstone grit**
- Thornton Force etc.

Needs to include labelled diagram(s). No diagram = L2 max

TOTAL [19 marks]

- 2 (a) Study Map D in the Resource Booklet, along with Photographs E and F.

- (i) Describe two differences between the residential areas shown in Photographs E and F. [2]

E	F
older	newer
terraced	apartments/flats/semi-detached
chimneys	no chimneys
slate roof	tile roof
on-street parking	parking areas
paved front garden	more greenery

Not: difference in size

2 x 1 mark

- (ii) Explain why housing such as that shown in Photograph E is found in many inner city areas in the UK. [4]

Ideas such as:

- close to industrial areas/CBD/where they work
- early housing built by factory owners
- workers had no transport to work/walk to work
- high density for lots of workers
- historical development of city/grew outwards
- expensive land
- cheap/affordable housing for workers etc.

4 x 1 mark

- (iii) Use evidence from Map D and Photograph F to explain the advantages and disadvantages of living in inner city areas such as this. [6]

Advantages such as: (✓a)

- within walking distance of shops/CBD
- employment close by/or in CBD
- near amenities such as sports centre/university
- off road parking
- close to canal/river/trees/grass
- near to main road/public transport routes
- affordable/modern housing etc.

Disadvantages such as: (✓d)

- congested roads/narrow roads
- high crime rates/anti-social behaviour/graffiti
- noise from traffic/factories
- lack of open space/play area/gardens
- air pollution from traffic
- visual pollution from derelict buildings
- lack of privacy/noisy neighbours/overcrowding
- no garage
- racial tension etc.

MAX 4 on each of advantages/disadvantages
Credit map evidence (**named** place/**named** feature/distance/grid square) as advantages or disadvantages

Reserve 1 mark maximum for map evidence (✓me)

6 x 1 mark

- (b) **For a named town or city in an MEDC, describe what is being done to manage traffic and improve the movement of people and goods.** [7]

Level 1 (1–3 marks)

Statements including limited detail describing attempts at traffic management eg:

- new roads/by-pass
- better public transport/bus lanes/bendy buses
- pedestrianisation etc.

Level 2 (4–6 marks)

More developed statements which describe attempts at traffic management eg:

- new outer ring road built to take traffic away from CBD
- introduction of trams and more regular services so that commuters rely less on cars
- pedestrianisation of streets so less danger from traffic.
- park and ride scheme so shoppers leave their cars on the edge of the city

Level 3 (7 marks)

Uses named example e.g. Sheffield - name of city is place specific
Comprehensive and accurate place specific statements eg:

- introduction of Supertram network
- integrated with bus and train services
- pedestrianisation of streets such as the Moor and Fargate in CBD.

No named example = level 2 max

TOTAL [19 marks]

- 3 (a) Look at Photograph G and H in the Resource Booklet.
 (i) Briefly describe two differences between the farms shown in the photographs. [2]

G	H
people	machinery
rice	wheat
flat	undulating
labour intensive	capital intensive
planting	harvesting
intensive	extensive

Differences may be expressed as comparison e.g.

More people in G

G is flatter

Not: subsistence/commercial

2 x 1 mark

- (ii) The farm shown in Photograph G is a subsistence farm. [2]
 The farm shown in Photograph H is a commercial farm.
 How are these two farming systems different?

Subsistence: Produce for own consumption/consumed by farmer/family

Commercial: Products are sold/for profit

- (b) Study Diagram I in the Resource Booklet.
 (i) Explain why the farming landscape has changed between 1960 and 2010. [4]

Examples such as:

- Bigger machines can be used in fields because hedgerows/trees/woodland have been removed
- More buildings for storing crops because more crops are produced
- Larger fields so that machines can work efficiently
- Set-side schemes encouraged by CAP regulations
- Streams are straightened to make straight field boundaries
- Footpaths are removed so more crops can be grown
- Pond has been drained to produce more land for crops
- Grass has been replaced by crops which are more profitable
- Less variety of crops are grown because specialisation on fewer crops is more profitable
- Crops such as oil seed rape are grown because they have EU subsidies
- Hedges are replaced by fencing to provide more land for crops etc

No credit just for describing change, but change must come from diagram.

Credit explanation for each change. Only credit each explanation once.

4 x 1 mark

- (ii) Many farmers have recently introduced farm diversification and developed new business activities on their land. [4]
Describe two examples of diversification and explain why farmers have made these changes.

Examples such as: (✓d)

- farm shop
- pick your own produce
- farm tours/zoo
- leisure/activities/paintballing/quad biking/golf course/golf driving range
- farmhouse teas
- B & B
- camp & caravan site
- holiday cottages
- specialist farms e.g. ostriches, bees, llama' wild boar

Reasons such as: (✓r)

- government/EU grants/CAP/quotas/set-aside
- more profitable/make more money
- farm in area attractive to tourists
- more people go on short breaks/increase in tourism
- safeguard income if farming is doing badly
- profitable use of unused/surplus land
- using empty farm buildings

Don't credit same reason twice. Cannot credit reason if no description.

2d+ 2r marks

- (c) For a named area in an LEDC, describe a farming system and explain why it is taking place in the area. [7]

Level 1 (1–3 marks)

Statements including limited detail which describe the farming system or explain why it is taking place, eg:

- planting/weeding/harvesting done by hand
- small plots of land
- large population to feed
- hot/wet climate suits rice growing.

Level 2 (4–6 marks)

More developed statements which describe the farming system or explain why it is taking place eg:

- rice is grown as a subsistence crop
- farms are very small, usually less than 1 ha
- planting is done in wet months/monsoon season
- harvesting done in dry, sunny months
- subsistence farmers may also grow some crops for profit

Level 3 (7 marks)

Uses named example such as Ganges Valley – accept as place specific

Comprehensive and place specific statements which describe

the farming system or explain why it is taking place.

Must contain 3 level 2 statements, one of which must be place specific eg:

- rice is grown in plots of land which are flooded in the wet season
- terraces are dug on hillsides or irrigation systems are used on the flood plain
- any surplus is sold in local villages or markets in Kolkata.

No named example = level 2 (6 marks) maximum

MEDC example = level 2 (4 marks) maximum

Farming system may be commercial or subsistence

TOTAL [19 marks]

- 4 (a) **Study Fig 4.**
- (i) **What is the total percentage of gases causing acid rain which are produced by power stations?** [1]
- 60(%)
- (ii) **Put the following sources of acid rain gases into rank order. Rank from highest to lowest.** [1]
- Power stations
Road transport
Industry
- (iii) **Explain how acid rain forms.** [3]
- Ideas such as:
- named gas - sulphur dioxide/nitrogen oxide
 - source - vehicle exhausts/power station/ fossil fuels
 - reaction - gases react with oxygen/water in atmosphere
 - lowers pH/results in sulphuric/nitric acid
- 3 x 1 mark
- (b) (i) **Describe effects of acid rain on the natural environment.** [4]
- Effects such as:
- acidification/lowers pH of lakes/rivers/streams/soil
 - poisons/kills insects/fish/aquatic life
 - food chains impacted (eg mayfly poisoned therefore less food for frogs)
 - negative impact on biodiversity
 - deformation/mutation of fish
 - needles/leaves of trees turn brown/fall off
 - nutrients washed out of soil
 - build up of toxins eg aluminium damage tree roots
 - dissolves/weathers limestone
- Not: trees damaged/effect on buildings/statues
- 4 x 1 mark
- (ii) **International cooperation is needed to solve the problem of acid rain. Explain why this is difficult to achieve.** [3]
- Ideas such as:
- pollution does not respect international boundaries/main polluters are not the countries suffering the effects
 - some countries contribute more to acidity than others
 - difficulties of monitoring emissions from countries/difficult to police
 - MEDCs are reluctant to invest in clean technology
 - LEDCs need industrialisation to promote development
 - LEDCs don't have money to invest in new technology/have other priorities
 - difficult to get countries to agree on action/implement protocol
- 3 x 1 mark

- (c) Another major environmental problem is global warming. [7]
Explain the causes of global warming. You should refer to
named areas which you have studied.

Level 1 (1–3 marks)

Statements including limited detail explaining the causes of global warming eg:

- deforestation
- burning fossil fuels
- power stations
- sun's rays cannot escape because of gases etc.

Level 2 (4–6 marks)

More developed statements which explain the causes of global warming eg:

- deforestation means that trees which would have used carbon dioxide are not there
- burning fossil fuels gives out carbon dioxide into atmosphere
- power stations which burn coal/oil give out greenhouse gases
- incoming energy from sun penetrates the layer of gases
- build up of gases produces a blanket and prevents re-radiation from earth.

Level 3 (7 marks)

Uses named example such as Amazonia – acceptable as place specific

Comprehensive and accurate place specific statements which describe the causes eg:

- deforestation in Amazonia means that trees which would have used carbon dioxide are not there
- industries burning coal in India/China give out gases which contain carbon dioxide into atmosphere.

Reference to one named area is sufficient for level 3.

No named area = level 2 (6 marks) maximum

Not volcanic ash

TOTAL [19 marks]

- 5 Study the OS map extract (1:50 000) of part of Leicestershire.**
- (a) Nottingham East Midlands Airport is in and around grid square 4526.**
- (i) Describe the site and situation of Nottingham East Midlands Airport.**

Ideas such as:

Site (✓S):

- flat/gently sloping land
- 80 – 100 metres high (or height between)
- well drained
- Not high / low

Situation:

- 1 to 2km (✓) south of Castle Donington (✓)
- 1 to 2 km (✓) north of Diseworth (✓)
- west of M1
- north of A42
- 2 to 3 km (✓) north of junction 23a/of M1/A42 (✓)
- Between / near to / close to / middle of **a named feature(s)** -
1 mark max
- Not grid reference

3 marks maximum on either distance or direction

1 mark reserve on each of site/situation

4 x 1 mark

- (ii) Measure the length of the runway in kilometres between Y and Z. [1]**

2.8 to 3.0 (km) – unit not required

- (b) Find the village of Castle Donington (in and around grid square 4427) on the OS map extract.**

- (i) Identify and give a 6 figure grid reference for one service in Castle Donington. [2]**

- church: 447273 / 445273 / 444273
- hotel: 444273
- post office: 448274
- college: 449271 Accept 1 or 2 for 6th digit not 0
- public house: 447283 / 442265
- cemetery: 452274
- museum: 442263
- telephone 455277
- level crossing 442285

Allow 1 either way on 3rd and 6th digit

If inappropriate service or symbol / abbreviation, still credit correct grid reference

1 mark for named service

1 mark for grid reference

2 x 1 mark

- (ii) **Study Photograph K in the Resource Booklet and Fig 5. The photograph shows a site where new housing is planned at Castle Donington. This is marked on the OS map extract. Suggest reasons why many local residents are against plans to build the new houses in Castle Donington.** [5]

Ideas such as:

- noise from construction
- noise from heavy vehicles / traffic
- 2 max on noise from,
- danger from traffic
- increased traffic / congestion
- disruption from construction traffic
- 2 max on traffic
- loss of amenity value of open space / footpath
- visual impact / natural beauty spoiled
- pressure on local amenities/or example (school/surgery/shops/jobs)
- concern over loss of vegetation (or example)
- impact on wildlife
- destruction of food chains
- loss of countryside / rural land
- 2 max on environment
- more surface runoff/greater chance of floods
- fall in house prices
- don't want village to expand etc.

No credit for stating positives about current situation

5 x 1 mark

- (c) **Look again at the OS map extract and at Photograph L in the Resource Booklet.**

- (i) **The photograph was taken from 501236. In which compass direction was the camera pointing?** [1]

NW/NNW

- (ii) **Using only evidence from the OS map and Photograph L, describe the natural features of the River Soar and its valley north of grid line 23 and east of grid line 48. You should include evidence from the OS map in your answer.** [6]

Level 1 (1–2 marks)

Statements including limited detail which describe the River Soar and its valley eg:

- flat/gently sloping valley sides
- lowland
- meandering
- tributaries
- river flowing north

- ox-bow lake
- flood plain
- river is wide
- lake
- island
- woodland etc.

Level 2 (3–4 marks)

More developed statements eg:

- flat land on valley floor with gently sloping sides
- river mainly straight but some small meanders etc
- has meanders and straight sections
- tributaries join main river from east and west
- western side is steeper
- river cutting through to form ox-bow lake
- ox-bow lake / cut-off is developing
- wooded island
- ox-bow lake in flood plain etc.

Level 3 (5–6 marks)

More developed statements including reference to map evidence eg:

- flat land on valley floor **1 km** in width
- with gently sloping sides reaching to heights of about **100 metres**
- tributary joins at GR **493256**

Level 3 evidence can be height / width / grid reference (4 or 6 figure as appropriate) / place name etc

Only use these for L3 evidence not as developed ideas.

Summary of marks awarded:

Level 2 – 3 marks: 1 L2 statement

Level 2 – 4 marks: 2 L2 statements OR 1 L2 statement + 1 map evidence

Level 3 – 5 marks: 2 L2 statements + 1 map evidence

Level 3 – 6 marks: 2 L2 statements + 2 map evidence

TOTAL [19 marks]

Assessment of quality of written communication

The ability of the candidate to communicate in written form should be assessed by forming an overview based across the paper; however those questions which involve extensive writing (eg case studies) are likely to be most useful in your assessment.

- 0** Candidate makes little attempt throughout the paper to communicate in written form.
- 1** Candidate communicates clearly by writing brief, simplistic statements, using everyday language.
- 2** Candidate generally communicates effectively, using specialist terms in some answers.
- 3** Candidate communicates effectively throughout, and uses specialist terms where appropriate.

OCR (Oxford Cambridge and RSA Examinations)
1 Hills Road
Cambridge
CB1 2EU

OCR Customer Contact Centre

14 – 19 Qualifications (General)

Telephone: 01223 553998

Facsimile: 01223 552627

Email: general.qualifications@ocr.org.uk

www.ocr.org.uk

For staff training purposes and as part of our quality assurance programme your call may be recorded or monitored

Oxford Cambridge and RSA Examinations
is a Company Limited by Guarantee
Registered in England
Registered Office; 1 Hills Road, Cambridge, CB1 2EU
Registered Company Number: 3484466
OCR is an exempt Charity



OCR (Oxford Cambridge and RSA Examinations)
Head office
Telephone: 01223 552552
Facsimile: 01223 552553