

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

**Pre-U Certificate**

## **MARK SCHEME for the May/June 2013 series**

### **9768 GEOGRAPHY**

**9768/04**

Paper 4 (Research Topic), maximum raw mark 50

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.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2013 series for most IGCSE, Pre-U, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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### Section A: Microclimates

- 1 Study Fig. 1 which shows wind speed information for the London Borough of Ealing, UK, collected as part of a study into the proposed site of a wind turbine at X which is labelled on Fig. 1.

Fig. 2 shows the wards in the London Borough of Ealing.

(a) Use Fig. 1 to state, for the ward of North Greenford:

(i) the maximum wind speed;

(ii) the maximum height of the land. [2]

- Max wind speed = > 5.79
- Max height = any number in the range 50–69 metres

(b) Using Fig. 1, how far does there appear to be a link between height of the land and wind speed? [4]

- Higher land does seem to have higher speeds
- e.g. Hangers Hill, N Greenford
- Lower land has lower speeds (e.g. < 20m in Hobbayne)
- But, there are anomalies, relationship not strong
- Full answer needs some judgement of the strength of the relationship, supporting evidence plus ref to an anomaly

(c) Fig. 3 is a 1:25 000 map extract showing the area around the proposed site of the wind turbine.

Using evidence from Figs 1 and 3, assess the suitability of the proposed site of the wind turbine. [6]

Accept any reasonable points which could be valid, but there must be clear reference to/support from Figs 1 and 3.

Candidates may consider a mix of both physical and human factors:

Physical – on flat land; not on the highest ground; bird sanctuaries nearby; open ground  
Human – housing nearby, school, golf club, farmland, roads

L3 (5–6 marks)

Clear and detailed assessment of the site; pros and cons of the factors considered  
Considers both physical and human factors, balance not required  
Accurate data support from the resources

L2 (3–4 marks)

Some assessment of the site but range of points limited  
Perhaps only human or only physical  
Provides data support at the top end of this level

L1 (0–2 marks)

Little attempt to address the question; simple description  
Data support inaccurate or lacking

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- (d) **Suggest what additional information might be required by those responsible for making the final decision about the wind turbine.** [8]

Expect a focus on microclimate, especially wind direction, frequency, temporal variations, max wind speeds, low wind speeds as well as the possible impacts of the surrounding built environment.

However, the wording of the question allows the discussion of a range of other factors which may be relevant e.g. political factors/planning considerations; views of local residents; local pressure groups; other alternative energies; engineering considerations (e.g. what wind speeds are dangerous?). Accept any reasonable suggestions.

L3 (6–8 marks)

A clear understanding of a range of other information which would be of use, along with an indication of why it would be useful or how it might be collected.

L2 (3–5 marks)

Aware of some other information which might be useful to the decision makers with some knowledge of why it would be useful or how it might be collected.

L1 (0–2 marks)

Little understanding of what other information might be required.

- 2 (a) **Study Fig. 4, which shows actual daily maximum temperatures and those predicted by a computer model at selected points for a new residential development in Singapore in 2009.**

**Using Fig. 4, how successful do you think the computer model has been in predicting temperatures for the new residential development?** [5]

Generally, the predicted temperatures are a few degrees higher than the actual temperatures recorded (e.g. pred = 35°C; actual ranges from 30.5 to 31.6°C).

There appears to be a fairly strong correlation, especially when the predictions are above 32°C. However, there are anomalies which should be mentioned, e.g. pred 29°C.

L3 (4–5 marks)

Clear and detailed assessment of the success of the computer model. Anomalies are clearly identified. Data is well used to support the points made.

L2 (2–3 marks)

A valid attempt to assess the success of the model. Data is used to support the points made. Less importance placed on the anomalies.

L1 (0–1 marks)

Limited ability to interpret the graph. May simply describe. Use of data is inaccurate or lacking.

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- (b) From your wider study of microclimates, why are microclimates more developed in some areas than in others? [10]**

An opportunity here to explore the topic of microclimates and how local conditions can modify regional climates. Candidates are free to use whatever material they have. A key point will be exploring why local conditions in some areas have a larger impact than in other areas (e.g. relief, slope, aspect, shelter, human influences). Good candidates will support their answers with relevant examples.

L3 (8–10 marks)

Modifying influences are to the fore with appropriate exemplar support. There is a sophisticated understanding of microclimates. The answer is well founded on evidence.

L2 (5–7 marks)

Able to offer some explanation. Sound knowledge and understanding, lacking depth in places. May be limited in range or in explanation.

L1 (0–4 marks)

The approach is largely descriptive and superficial with little or no attempt to address the question. Little exemplar support.

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**EITHER**

- 3 With reference to your own investigation of microclimates, outline the problems you encountered during the collection of primary data and consider the extent to which you were successful in overcoming these problems.**

**Begin by stating the question or hypothesis that you investigated. [15]**

Answers should be based firmly on their own investigations, quoting examples drawn from this.

Clearly, much depends on the investigation and the choice of data. Candidates should be able to recount the problems they encountered and the ways in which they attempted to overcome these problems.

In terms of evaluation a range of responses is acceptable from 'to a large extent' to 'to a small extent' depending upon the investigation.

**L4 (13–15 marks)**

The candidate displays a high order understanding of the problems encountered and the extent to which they were successfully dealt with. There is a good support drawn from the investigation. Evaluation to the fore.

**L3 (10–12 marks)**

Good understanding of the problems encountered and the extent to which the problems were solved. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question.

**L2 (7–9 marks)**

More focused on the candidate's own investigation. Describes the problems, but in only a superficial fashion. Little attempt to consider the success of solutions.

**L1 (0–6 marks)**

Discussion lacks detail. Perhaps descriptive only, with only piecemeal comments. Little reference to candidate's own investigation.

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OR

- 4 With reference to your own investigation of microclimates, consider the strengths and limitations of the techniques you used to present and analyse your findings.**

**Begin by stating the question or hypothesis that you investigated. [15]**

Answers should be based firmly on their own investigation, quoting examples drawn from this.

Clearly, much depends on the investigation and the techniques chosen. Graphical, cartographical, ICT and statistical techniques are all valid, but may not be used.

L4 (13–15 marks)

The candidate displays a high order understanding of the strengths and limitations of the techniques used. Evaluation is to the fore and well supported by examples drawn from the candidate's own investigation.

L3 (10–12 marks)

Good understanding of the strengths and limitations of the techniques used. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question.

L2 (7–9 marks)

More focused on the candidate's own investigation. Attempts to address the question, but in only a superficial fashion. Only limited support from the candidate's own investigation.

L1 (0–6 marks)

Discussion lacks detail. Perhaps descriptive only, with little attempt to address the question. Little reference to candidate's own investigation.

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### Section B: Conservation

**5 Study Fig. 5, which shows information about soil conservation practices on farms in Canada in 2001 and 2006.**

**(a) Using evidence from Fig. 5, state the change in the percentage of farms using wind breaks and shelter belts between 2001 and 2006.** [2]

- 36 – 12.5 +/- 0.5
- = 23.5 (or to match above)

**(b) Using Fig. 5, describe the changes in soil conservation practices between 2001 and 2006.** [4]

Credit and any valid points, looking for some form of analysis (e.g. largest, smallest, a difference of, trebling).

A full answer must have at least three changes and supporting data from the graph.

**Fig. 6 shows information about the main causes of soil degradation in susceptible drylands by region.**

**(c) ‘The relative contribution of causes of soil degradation is similar in Africa and Asia.’**

**How far does Fig. 6 support this statement?** [6]

While causes might be similar, the relative contribution of each cause differs  
 e.g. overgrazing –32.1% in Asia to 57.8% in Africa  
 similarly, there’s a large difference in deforestation (5.8% in Africa, 40.7% in S America)  
 Bio-industrial activities appear only in Asia

On the basis of this the map doesn’t seem to support the assertion. Credit well those who give an opinion and are able to support it with evidence from the resource.

L3 (5–6 marks)

Clear and detailed account, well focused on the question with extensive and accurate data support.

L2 (3–4 marks)

Clear attempt to address the question, but lacks the sophistication of the best answers. Provides data support from both Africa and Asia.

L1 (0–2 marks)

Descriptive with little attempt to address the question. Data support inaccurate or lacking.

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- (d) Suggest additional information, other than that shown on Figs 5 and 6, which might be required by those responsible for conserving soils. [8]**

The scope is general, so any relevant information will be acceptable.

Examples might include:

Fig. 5 shows conservation practices – information about the effectiveness, the cost, the training needs and other alternatives would be required before a choice could be made.

Fig. 6 shows causes – but they are all to do with human activity. Information about the physical causes would certainly help. Also, information about grants, technical advice and any other support which may be available would be useful.

L3 (6–8 marks)

Clear and detailed analysis of other information which may be required.

L2 (3–5 marks)

An understanding of other resources which would be of use.

L1 (0–2 marks)

Little understanding of other information which may be useful; perhaps simple description.

- 6 (a) Study Fig. 7, which shows information about forest areas in Southern Cameroon, West Africa in 1971 and 1999.**

**To what extent does Fig. 7 support the view that the protected areas policy for conserving forest areas in Southern Cameroon between 1971 and 1999 was a success? [5]**

In spite of the fact that the number of protected areas rose from 3 in 1971 to 5 in 1999 the number of forest concessions now covers almost the whole of the southern part of the map. It's then possible to contrast the limited success of protected areas 2 and 5 with the success of areas 1, 3 and 4.

L3 (4–5 marks)

Clear and detailed analysis of the success (or otherwise) of the protected areas policy. Data is well used to support the points made.

L2 (2–3 marks)

A valid attempt to address the question. Data is used to support the points made.

L1 (0–1 marks)

Limited ability to interpret the resource, may simply describe. Use of data is inaccurate or lacking. No attempt to address the question.

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- (b) From your wider study of conservation, consider the extent to which it is possible to manage natural environments in a sustainable way. [10]**

Much will depend upon the examples chosen, and candidates may legitimately consider that management has been a success, a partial success or not at all successful. The important feature is that they must make an assessment of the sustainability of the management strategies.

L3 (8–10 marks)

Evaluation is to the fore with sophisticated exemplar support. There is a clear and well supported attempt to 'consider the extent'.

L2 (5–7 marks)

Describes management but the evaluation, though present, is less well thought out or weakly justified. Exemplar support limited.

L1 (0–4 marks)

There is some reference to management but the approach is largely descriptive and piecemeal. No attempt to evaluate or very superficial. May be no reference to sustainability.

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**EITHER**

- 7 With reference to your own investigation of conservation, outline the problems you encountered during the collection of primary data and consider the extent to which you were successful in overcoming these problems.**

**Begin by stating the question or hypothesis that you investigated. [15]**

Answers should be based firmly on their own investigations, quoting examples drawn from this.

Clearly, much depends on the investigation and the choice of data. Candidates should be able to recount the problems they encountered and the ways in which they attempted to overcome these problems.

In terms of evaluation a range of responses is acceptable from 'to a large extent' to 'to a small extent' depending upon the investigation.

**L4 (13–15 marks)**

The candidate displays a high order understanding of the problems encountered and the extent to which they were successfully dealt with. There is good support drawn from the investigation. Evaluation to the fore.

**L3 (10–12 marks)**

Good understanding of the problems encountered and the extent to which the problems were solved. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question.

**L2 (7–9 marks)**

More focused on the candidate's own investigation. Describes the problems, but in only a superficial fashion. Little attempt to consider the success of solutions.

**L1 (0–6 marks)**

Discussion lacks detail. Perhaps descriptive only, with only piecemeal comments. Little reference to candidate's own investigation.

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OR

- 8 With reference to your own investigation of conservation, consider the strengths and limitations of the techniques you used to present and analyse your findings.**

**Begin by stating the question or hypothesis that you investigated. [15]**

Answers should be based firmly on their own investigation, quoting examples drawn from this.

Clearly much depends on the investigation and the techniques chosen. Graphical, cartographical, ICT and numerical techniques are all valid, but may not all be used.

L4 (13–15 marks)

The candidate displays a high order understanding of the strengths and limitations of the techniques used. Evaluation is to the fore and well supported by examples drawn from the candidate's own investigation.

L3 (10–12 marks)

Good understanding of the strengths and limitations of the techniques used. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question.

L2 (7–9 marks)

More focused on the candidate's own investigation. Attempts to address the question, but in only a superficial fashion. Only limited support from the candidate's own investigation.

L1 (0–6 marks)

Discussion lacks detail. Perhaps descriptive only, with little attempt to address the question. Little reference to candidate's own investigation.

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### Section C: Central Business Districts

9 Study Fig. 8 which shows the Central Business District (CBD) of Newcastle Upon Tyne, UK.

(a) Identify *two* features on Fig. 8 which show this area is the CBD. [2]

Credit any 2 valid points e.g. Cathedral, Civic Centre, Central station, City Hall, Street pattern, Bus station, Market, Tourist Information Centre, Museum, Castle, Law Courts, Route focus.

(b) Using Fig. 8, what evidence is there of functional zoning in Newcastle's CBD? [4]

In the North – administration/education e.g. University, Civic Centre  
 To the South – Cathedrals, Law courts, Central station  
 Commercial/Market in the centre; museum + tourist info centre  
 Transport zone to the East

Credit idea of location (1 mark) plus support (1 mark each) up to 4 marks  
 Must refer to three different zones for full marks

Fig. 9 shows the location of banks and building societies in the CBD of Newcastle Upon Tyne in 1967 and 2004.

(c) Using Fig. 9, describe the changes in the location and distribution of banks and building societies in Newcastle Upon Tyne between 1967 and 2004. [6]

Relevant comments may refer to the increasing number along Northumberland Street plus side streets e.g. Blackett Street in 2004 cf 1967; the clustering close to both metro stations in 2004 that were not present in 1967; the decline in the S and SW of the map; the NNE shift of the centre of gravity by 200m, overall a greater number and a much wider distribution. Mark location and distribution together.

L3 (5–6 marks)

Clear and detailed description, well focused on the question.  
 Extensive and accurate data support.

L2 (3–4 marks)

Clear description of the changes. Provides data support.

L1 (0–2 marks)

Descriptive – limited awareness of the changes or no reference to the question.  
 Data support inaccurate or lacking.

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**(d) A major financial company plans to open a new branch in the CBD of Newcastle Upon Tyne.**

**Consider the advantages and limitations of Figs 8 and 9 to the company when choosing a location for the new branch.**

**[8]**

Accept any valid comments.

Fig. 8 shows road layout, Metro stations and bus stations – hence useful for assessing access. But, the scale is limiting and there is no indication of pedestrian flows.

Fig. 9 shows the location of other financial institutions as well as the accessibility of the area. The PLVI on the 2004 map gives an indication of pedestrian flow as well as land values, but lacks detail about shop frontages and other types of retail activity which might attract potential customers into the area.

Good responses will deal with the advantages and limitations of each resource and give an assessment of their value, perhaps suggesting other resources which may be useful (e.g. vacant plots, rent details, planning restrictions).

**L3 (6–8 marks)**

Clear and detailed analysis of the usefulness and limitations of the resources. The resources are well used to support the points made. An understanding of other resources which would be of use.

**L2 (3–5 marks)**

Some analysis of the usefulness and limitations of the resources, which may be unbalanced. Provides support for some observations.

At the top end there may be a limited awareness of other resources which might be useful.

**L1 (0–2 marks)**

Little understanding of the usefulness of the resources; perhaps simple description.

Support is inaccurate or lacking.

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- 10 (a) Figs 10A and 10B show two different methods of presenting the same data from a study of pedestrian flows in the centre of Ambleside, Cumbria, UK.**

**Which of the two methods do you think is more appropriate for showing the results? Briefly explain the reasons for your choice. [5]**

Accept an answer which is well supported by reference to the resources. Expect many to opt for the isoline map, citing good value impression, the fact that it gives a 'complete' picture (Fig. 10A has gaps in between the survey points) and it's possible to detect a gradient in terms of pedestrian flow. There must be reference to both resources for full marks.

L3 (4–5 marks)

Clear and detailed attempt at the question. The resources as well used to support the points made.

L2 (2–3 marks)

A valid attempt to address the question. The points are supported by reference to the resources.

L1 (0–1 marks)

Limited ability to interpret the maps, may simply describe. Use of data is inaccurate or lacking. No attempt to address the question.

- (b) From your wider study of Central Business Districts, consider the extent to which recent changes in CBDs have been the result of economic factors. [10]**

Much depends on the examples chosen, and a range of responses would be valid e.g. to a large extent, to some extent or to a limited extent.

Good answers will probably consider social and political/planning factors as well, enabling a more secure evaluation to be made.

A good response will address the evaluative nature of the question and be well supported with exemplar material.

L3 (8–10 marks)

Evaluation is to the fore with sophisticated exemplar support. There is a clear consideration of the extent to which recent changes have been the result of economic factors.

L2 (5–7 marks)

Addresses the evaluative element of the question, but the evaluation is expressed without any depth of argument or only a superficial level of support.

L1 (0–4 marks)

The approach is largely descriptive and piecemeal.

No attempt to address the question.

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**EITHER**

- 11 With reference to your own investigation of Central Business Districts, outline the problems you encountered during the collection of primary data and consider the extent to which you were successful in overcoming these problems.**

**Begin by stating the question or hypothesis that you investigated. [15]**

Answers should be based firmly on their own investigations, quoting examples drawn from this.

Clearly, much depends on the investigation and the choice of data. Candidates should be able to recount the problems they encountered and the ways in which they attempted to overcome these problems.

In terms of evaluation a range of responses is acceptable from 'to a large extent' to 'to a small extent' depending upon the investigation.

L4 (13–15 marks)

The candidate displays a high order understanding of the problems encountered and the extent to which they were successfully dealt with. There is a good support drawn from the investigation. Evaluation to the fore.

L3 (10–12 marks)

Good understanding of the problems they encountered and the extent to which the problems were solved. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question.

L2 (7–9 marks)

More focused on the candidate's own investigation. Describes the problems, but in only a superficial fashion. Little attempt to consider the success of solutions.

L1 (0–6 marks)

Discussion lacks detail. Perhaps descriptive only, with only piecemeal comments. Little reference to candidate's own investigation.

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OR

- 12 With reference to your own investigation of Central Business Districts, consider the strengths and limitations of the techniques you used to present and analyse your findings.**

**Begin by stating the question or hypothesis that you investigated. [15]**

Answers should be based firmly on their own investigation, quoting examples drawn from this.

Clearly, much depends on the investigation and the techniques chosen. Graphical, cartographical, ICT and numerical techniques are all valid, but may not all be used.

L4 (13–15 marks)

The candidate displays a high order understanding of the strengths and limitations of the techniques used. Evaluation is to the fore and well supported by examples drawn from the candidate's own investigation.

L3 (10–12 marks)

Good understanding of the strengths and limitations of the techniques used. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question.

L2 (7–9 marks)

More focused on the candidate's own investigation. Attempts to address the question, but in only a superficial fashion. Only limited support from the candidate's own investigation.

L1 (0–6 marks)

Discussion lacks detail. Perhaps descriptive only, with little attempt to address the question. Little reference to candidate's own investigation.