Cambridge Assessment International Education
Cambridge Pre-U Certificate

**GEOGRAPHY** **9768/04**

Paper 4 Research Topic **May/June 2018**

MARK SCHEME

Maximum Mark: 50

**Published**

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 International will not enter into discussions about these mark schemes.

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This document consists of **20** printed pages.

Cambridge Assessment International Education

**[Turn over**

## Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

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GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

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GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

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GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

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GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

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GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

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GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

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| Question | Answer | Marks |
|---|---|---|
| 1(a) | **Study Fig. 1, which shows percentage change in amount spent and quantity bought in UK retailing for selected sectors from March 2015 to March 2016.**<br><br>**Giving evidence from Fig.1, state which sector of retailing between March 2015 and March 2016 had:**<br><br>(i) **the largest decrease in amount spent;**<br>textile, clothing and footwear; –6.4%<br>(ii) **the largest increase in quantity bought.**<br>non- specialised stores; 6.2% | 2 |
| 1(b) | **Describe the main trends in UK retailing shown in Fig. 1.**<br><br>Accept any 4 valid points, reserving 1 mark each for amount spent and for quantity bought and 1 mark for data support.  Valid points might include:<br><br>Quantity bought – all sectors show an increase except textile, clothing and footwear (–6.2%); increases range from 1.4% up to 6.2%<br><br>Amount spent – a more mixed picture; 4 sectors show growth ranging from 0.8% to 6% – the others decline, 2 by small amounts (–0.6% and –0.8%) and tex, cloth and footwear by –6.4%. | 4 |

| Question | Answer | Marks |
|---|---|---|
| 1(c) | **Study Fig. 2, which shows internet sales by device at selected times of day for one major retailer in the UK in 2013.**<br><br>**Using Fig. 2, describe the ways in which internet sales by device vary throughout the day.**<br><br>Accept any reasonable points which could be valid, but there must be clear reference to/support from Fig. 2.<br><br>For full marks there needs to be reference to both number of sales and the devices used to make those sales. Some points that could be made include:<br><br>• An increase in number throughout the day (from 500 to 2000)<br>• Greater use of desktops in the early morning<br>• Mobile devices peak 1100 to 1200<br>• Lower use of tablets 1100–1200, about 25%<br><br>**L3**                                      **(5–6 marks)**<br>Clear and detailed description of the patterns in Fig. 2<br>Considers both number of sales and the devices used, balance not required<br>Accurate data support from the resources<br><br>**L2**                                      **(3–4 marks)**<br>Some attempts at description<br>Probably number of sales missing<br>Provides data support at the top end of this level<br><br>**L1**                                      **(0–2 marks)**<br>Little attempt to address the question; simple description<br>Data support inaccurate or lacking | 6 |

| Question | Answer | Marks |
|---|---|---|
| 1(d) | **A major retailer is considering whether to expand its internet sales in the near future. Assess the benefits and limitations of Figs. 1 and 2 to the company in making its decision.**<br><br>Fig. 1 gives information about changes in both value and volume of different retail sectors over a 12 month period in 2016. Additionally, non-store retailing (presumably internet?) appears to have grown overall in both value and volume. However, the figures are percentages and not absolute values and the sector groupings appear ambiguous e.g. other stores, non-food stores? Additionally, the data is for 2016 – two years out of date in the fast moving retail industry.<br><br>Fig. 2 is specifically internet related and gives useful information about the type of device used and patterns throughout the day. However, the data is for one year only (2013) and for only 3 specific hours during the day.<br><br>In addition, other types of information would be very useful, for example,<br><br>• consumer surveys about shopping behaviour and consumer needs or wants (e.g. click and collect or home delivery)<br>• availability of the internet at home, at work and on the move<br>• consumer access to internet enabled devices<br>• planning policy and other official decisions affecting the sector, e.g. high speed broadband<br>• plans of rival store chains<br><br>**L3**                                   **(6–8 marks)**<br>A clear understanding of the strengths and limitations of the resources with evaluation to the fore. Knowledge of other resources/information which would be of use. Mature assessment.<br><br>**L2**                                   **(3–5 marks)**<br>Discussion of the pros and cons of the resources but assessment weakly developed. Very limited knowledge of other resources which may be of use. Provides support for some observations.<br><br>**L1**                                   **(0–2 marks)**<br>Little understanding of the question, perhaps simple description of the data. Support is inaccurate or lacking. | **8** |

**PUBLISHED**

| Question | Answer | Marks |
|---|---|---|
| 2(a) | **Study Fig. 3, which shows the distribution of selected coffee shops in central London in 2015.**<br><br>**Describe the distribution of selected coffee shops in central London shown in Fig. 3.**<br><br>Good descriptions will need to consider clusters as well as areas where coffee shops are sparse. Borough names and compass directions should be used to locate the areas mentioned.<br><br>Main concentration is generally to the north of the river – within that area major clusters appear in the City of London and to the east of the borough of Westminster. Other less developed clusters appear just to the south of the river (Southwark and Lambeth). Very few coffee shops appear around the edge of the map<br><br>**L3**                                      **(4–5 marks)**<br>Clear and detailed discussion with clusters and sparse areas identified and located. Fig. 3 is well used to support the points made (named areas, compass points, perhaps distances)<br><br>**L2**                                      **(2–3 marks)**<br>A valid attempt to address the question. Evidence is used to support the points made. Lacks the detail or clarity needed for L3<br><br>**L1**                                      **(0–1 marks)**<br>Little attempt to describe the distribution. | 5 |

| Question | Answer | Marks |
|---|---|---|
| 2(b) | **'High streets in the United Kingdom are in a state of terminal decline.' From your wider study of retail patterns, how far do you agree with this statement?**<br><br>Quality of argument will be the main discriminator rather than breadth of knowledge.<br><br>An opportunity here for candidates to use the knowledge they've gained from their individual research. Any point of view is acceptable, but credit well those who are able to support their view with useful exemplar support. The best candidates will address the evaluative aspect of the question – this will indicate L3. Candidates will need to consider some of the causes of retail change – political, social, demographic, economic, environmental and changing technologies – to arrive at a robust and balanced judgement.<br><br>**L3** **(8–10 marks)**<br>A clear focus on the question with appropriate exemplar support. There is a sophisticated understanding of the role of a range of factors. The evaluation is well supported.<br><br>**L2** **(5–7 marks)**<br>Expresses a view and provides some support. Sound knowledge and understanding, but overall lacking depth. May be limited in range, in explanation or in exemplification.<br><br>**L1** **(0–4 marks)**<br>The approach is largely descriptive and superficial with little or no attempt to address the question. Little exemplar support. | 10 |

| Question | Answer | Marks |
|---|---|---|
| 3 | **With reference to your own investigation of retail patterns, assess the considerations you took into account when establishing a plan for conducting your investigation.** <br><br> **Begin by stating the question or hypothesis that you investigated.** <br><br> Answers should be based firmly on their own investigations, quoting examples drawn from this. <br><br> Clearly, much depends on the investigation. The syllabus specifies the following general points: <br><br> • establish the data needed to examine the question/hypothesis posed <br> • establish appropriate strategies and methods for collecting the necessary data (including sampling where appropriate) <br> • understand limitations imposed by resources <br> • appreciate and minimise potential risks in undertaking research. <br><br> Candidates are likely to express their discussions in terms of, for example, scale, location, availability of resources (equipment, manpower) and time considerations. <br><br> The question asks candidates to assess – this will be an indicator of quality. <br><br> **L4**                                                  **(13–15 marks)** <br> The candidate displays a high order understanding. Addresses the evaluative aspect of the question in a mature and cogent fashion. The points made are well supported with examples drawn from the candidate's own investigation. <br><br> **L3**                                                **(10–12 marks)** <br> Good understanding of what should be taken into consideration. The answer makes appropriate reference to the candidate's own investigation. Focused on the question but the evaluation is limited or superficial. <br><br> **L2**                                                 **(7–9 marks)** <br> Answer is focused on the candidate's own investigation. Describes some of the considerations, but in only a superficial fashion. Largely descriptive with little relevance to the question as set might just reach this level. <br><br> **L1**                                                 **(0–6 marks)** <br> Discussion lacks detail. Perhaps descriptive, with only piecemeal comments. Little reference to candidate's own investigation. | 15 |

| Question | Answer | Marks |
|---|---|---|
| 4 | **With reference to your own investigation of retail patterns, how far were you able to explain all your findings?** <br><br> **Begin by stating the question or hypothesis that you investigated.** <br><br> Answers should be based firmly on their own investigations, quoting examples drawn from this. <br><br> Clearly, much depends on the investigation. Candidates should be aware of the limitations of their investigation (e.g. spatial, temporal, scale, methodology) and the interplay between a range of factors, some of which may be unknown. <br><br> In terms of evaluation a range of responses is acceptable from 'to a large extent' to 'to a small extent' depending upon the investigation. The key point is that the evaluation must be supported by the evidence presented. <br><br> An acceptable approach would be to discuss the findings that can be confidently explained, those for which an explanation is possible and those for which there appears to be no explanation. Such an approach would then allow a meaningful evaluation to be made. <br><br> **L4**                                           **(13–15 marks)** <br> The candidate displays a high order understanding of the extent to which all the findings could be explained. There is good support drawn from the investigation. Evaluation to the fore. <br><br> **L3**                                           **(10–12 marks)** <br> Good understanding of the extent to which all the findings could be explained. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question. <br><br> **L2**                                           **(7–9 marks)** <br> More focused on the candidate's own investigation. Describes the findings, but in only a superficial fashion. May focus on just those findings which can be explained. <br> Largely descriptive with little relevance to question will just reach this level. <br><br> **L1**                                           **(0–6 marks)** <br> Discussion lacks detail. Perhaps weak description only, with occasional piecemeal comments about the findings. Little reference to candidate's own investigation. | 15 |

| Question | Answer | Marks |
|---|---|---|
| 5(a) | **Study Fig. 4, which shows deprivation in the city of Brighton and Hove along transects from the Central Business District (CBD) in a north easterly direction and in a north westerly direction for 2013.**<br><br>**Giving evidence from Fig. 4, at what distance from the CBD was the greatest difference in deprivation between the two transects?**<br><br>At 3 km = 1 mk; index 7 to index 1 or difference of 6 = 1 mk | 2 |
| 5(b) | **Compare the pattern of deprivation with distance along the two transects shown in Fig. 4.**<br><br>Accept any 4 valid points, reserving 1 mark for data support. Valid points might include:<br><br>Fairly similar from 0 to 1.5 km (decile 2 and 3)<br><br>At 2km NE becomes much less deprived; from 2.5 km onwards NW transect much less deprived than NE; at 6 km position reversed (NE much less deprived than NW transect); overall, apart from the first 1.5 km, there is little similarity (or converse).<br><br>*If no comparison, max = 2 mks* | 4 |
| 5(c) | **Study Fig. 5A, which shows deprivation in the city of Brighton and Hove in 2013. Fig. 5B shows the wards in Brighton and Hove in 2013.**<br><br>**'Deprivation is worse in the inner areas of British cities.'**<br><br>**With reference to Figs. 5A and 5B, how far does deprivation in Brighton and Hove in 2013 support this statement?**<br><br>The areas around the CBD are mostly in the 2 most deprived quintiles. The least deprived area (Withdean) is peripheral, but there is much evidence to suggest the statement is an oversimplification, if not simply incorrect. Answers with a well-supported judgement will be the indicator of quality.<br><br>**L3**                       **(5–6 marks)**<br>Clear and detailed description well focussed on the evaluative aspect of the question<br>The judgement will be well supported with clear reference to the Figs.<br><br>**L2**                       **(3–4 marks)**<br>Some useful descriptive points with reference/support from the Figs.<br>If there is a judgement it will be simplistic/superficial<br><br>**L1**                       **(0–2 marks)**<br>Little attempt to address the question; simple description with no reference to the question<br>Data support inaccurate or lacking | 6 |

| Question | Answer | Marks |
|---|---|---|
| 5(d) | **Evaluate the strengths and weaknesses of Figs. 4 and 5A to those responsible for addressing deprivation in urban areas.** | 8 |
| | Fig. 4 Gives a good visual impression of the spatial variation in deprivation along two different transects. However, the information is dated (2013) and is not up to date. What about other directions? How exactly is the deprivation index defined? | |
| | Fig. 5A gives a good visual impression of the spatial pattern of deprivation in Brighton and Hove. However, the information is dated; being a choropleth map it's hampered by the usual problems (step-like boundaries/hidden variation within large areas, etc.). Also, how exactly is deprivation defined in Fig. 5A? | |
| | Other information which might be of use could be scores for the different dimensions of deprivation (income, employment, health, crime, etc.), up to date information, more detailed mapping, views of those most affected to name a few. | |
| | **L3**                                             **(6–8 marks)** <br>A clear understanding of the strengths and limitations of the resources with evaluation to the fore. Knowledge of other resources/information which would be of use. Mature assessment. | |
| | **L2**                                             **(3–5 marks)** <br>Discussion of the pros and cons of the resources but assessment weakly developed. Very limited knowledge of other resources which may be of use. Provides support for some observations. | |
| | **L1**                                             **(0–2 marks)** <br>Little understanding of the question, perhaps simple description of the data. Support is inaccurate or lacking. | |

| Question | Answer | Marks |
|---|---|---|
| 6(a) | **Study Fig. 6, which shows deprivation for Hartlepool (County Durham) and Poole (Dorset) in 2010.**<br><br>**'Hartlepool suffers more deprivation than Poole'.**<br><br>**How far does Fig. 6 support this statement?**<br><br>For 6 of the 8 indicators shown this is true, however for living environment and barriers to housing and services, Poole is more deprived. An indicator of quality would be an assessment supported by the extent to which the indicators differ between the 2 towns.<br><br>**L3**                                                        **(4–5 marks)**<br>Clear and detailed discussion with assessment to the fore. Fig. 6 is well used to support the points made<br><br>**L2**                                                        **(2–3 marks)**<br>A valid attempt to address the question. Evidence is used to support the points made. Lacks the detail or clarity needed for L3. Description without contrasts will just reach this level.<br><br>**L1**                                                        **(0–1 marks)**<br>Little attempt to answer the question or describe the information shown on Fig. 6. | **5** |
| 6(b) | **From your wider study of deprivation, how far can the cycle of deprivation account for deprivation found in urban areas?**<br><br>Quality of argument will be the main discriminator rather than breadth of knowledge.<br><br>An opportunity here for candidates to use the knowledge they've gained from their individual research. Any point of view is acceptable, but credit well those who are able to support their view with useful exemplar support. The best candidates will address the evaluative aspect of the question. Candidates will need to consider some of the other causes of poverty – political, social, demographic, economic, environmental – to arrive at a robust and balanced judgement. The question is not confined to MEDCs – accept (but do not expect) an LEDC context.<br><br>**L3**                                                        **(8–10 marks)**<br>A clear focus on the question with appropriate exemplar support. There is a sophisticated understanding. The evaluation is well supported by exemplar material. Causes other than cycle of deprivation will be considered.<br><br>**L2**                                                        **(5–7 marks)**<br>Expresses a view and provides some support. Sound knowledge and understanding, perhaps overall lacking depth. May be limited in explanation or in exemplification.<br><br>**L1**                                                        **(0–4 marks)**<br>The approach is largely descriptive and superficial with little or no attempt to address the question. Little exemplar support. | **10** |

| Question | Answer | Marks |
|---|---|---|
| 7 | **With reference to your own investigation of deprivation, assess the considerations you took into account when establishing a plan for conducting your investigation.**<br><br>**Begin by stating the question or hypothesis that you investigated.**<br><br>Answers should be based firmly on their own investigations, quoting examples drawn from this.<br><br>Clearly, much depends on the investigation. The syllabus specifies the following general points:<br><br>•   establish the data needed to examine the question/hypothesis posed<br>•   establish appropriate strategies and methods for collecting the necessary data (including sampling where appropriate)<br>•   understand limitations imposed by resources<br>•   appreciate and minimise potential risks in undertaking research.<br><br>Candidates are likely to express their discussions in terms of, for example, scale, location, availability of resources (equipment, manpower) and time considerations.<br><br>The question asks candidates to assess – this will be an indicator of quality.<br><br>**L4**                                    **(13–15 marks)**<br>The candidate displays a high order understanding. Addresses the evaluative aspect of the question in a mature and cogent fashion. The points made are well supported with examples drawn from the candidate's own investigation.<br><br>**L3**                                    **(10–12 marks)**<br>Good understanding of what should be taken into consideration. The answer makes appropriate reference to the candidate's own investigation. Focused on the question but the evaluation is limited or superficial.<br><br>**L2**                                    **(7–9 marks)**<br>Answer is focused on the candidate's own investigation. Describes some of the considerations, but in only a superficial fashion. Largely descriptive with little relevance to the question as set might just reach this level.<br><br>**L1**                                    **(0–6 marks)**<br>Discussion lacks detail. Perhaps descriptive, with only piecemeal comments. Little reference to candidate's own investigation. | 15 |

| Question | Answer | Marks |
|---|---|---|
| 8 | **With reference to your own investigation of deprivation, how far were you able to explain all your findings?** <br><br> **Begin by stating the question or hypothesis that you investigated.** <br><br> Answers should be based firmly on their own investigations, quoting examples drawn from this. <br><br> Clearly, much depends on the investigation. Candidates should be aware of the limitations of their investigation (e.g. spatial, temporal, scale, methodology) and the interplay between a range of factors, some of which may be unknown. <br><br> In terms of evaluation a range of responses is acceptable from 'to a large extent' to 'to a small extent' depending upon the investigation. The key point is that the evaluation must be supported by the evidence presented. <br><br> An acceptable approach would be to discuss the findings that can be confidently explained, those for which an explanation is possible and those for which there appears to be no explanation. Such an approach would then allow a meaningful evaluation to be made. <br><br> **L4**                                       **(13–15 marks)** <br> The candidate displays a high order understanding of the extent to which all the findings could be explained. There is good support drawn from the investigation. Evaluation to the fore. <br><br> **L3**                                       **(10–12 marks)** <br> Good understanding of the extent to which all the findings could be explained. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question. <br><br> **L2**                                       **(7–9 marks)** <br> More focused on the candidate's own investigation. Describes the findings, but in only a superficial fashion. May focus on just those findings which can be explained. <br> Largely descriptive with little relevance to question will just reach this level. <br><br> **L1**                                       **(0–6 marks)** <br> Discussion lacks detail. Perhaps weak description only, with occasional piecemeal comments about the findings. Little reference to candidate's own investigation. | **15** |

| Question | Answer | Marks |
|---|---|---|
| 9(a) | **Study Fig. 7, which shows bedload particle diameter and distance from the source of a river.**<br><br>**Giving evidence from Fig. 7, at what distance from the source does the bedload have the largest range of diameters?**<br><br>1000 m = 1 mk; 130 – 14 or 116 *cm* = 1 mk *(Units essential for the mark)* | **2** |
| 9(b) | **Describe the relationship between particle diameter and distance from the river source shown in Fig. 7.**<br><br>Accept any *3* valid points, reserving 1 mark for data support. Valid points might include:<br><br>Median – initially 68, declines overall to 60 at 2000 m, but rises to 72 at the intermediate points<br><br>Minimum – declines slightly overall from 11 to 8, but rises to 13 at 1000 m<br><br>Max – declines overall from 120 to 108, rising to 130 at 1000 m<br><br>Both the UQ and the LQ decline, but the IQR stays almost unchanged<br><br>The overall picture seems to be one of declining diameter, but with considerable variation. | **4** |

| Question | Answer | Marks |
|---|---|---|
| 9(c) | **Study Fig. 8, which shows bedload particle shape with distance from the source along a river's course.**<br><br>**'Bedload roundness increases with distance from the source of a river.'**<br><br>**To what extent does Fig. 8 support this hypothesis?**<br><br>Accept any reasonable valid points, but there must be clear reference to/support from Fig. 8. An indicator of quality will be a focus on the evaluative aspect of the question.<br><br>Some points that could be made include:<br><br>• An increase in v. rounded (from 2% to 10%) and rounded (from 7% to 15%) overall but with variation in between<br>• An overall decrease in v. angular (from 4% to 1%) and angular (from 10% to 2%), but with variation in between<br>• An overall increase in sub-rounded (from 32% to 50%) and a corresponding decrease in sub angular (from 55 to 22%), but with variation in between.<br><br>**L3**                            **(5–6 marks)**<br>Clear description with a focus on the evaluative part of the question<br>Considers both the overall pattern and the variation within it<br>Accurate data support from the resources is well used to inform the judgement<br><br>**L2**                            **(3–4 marks)**<br>Some attempt at making an assessment<br>Provides data support at the top end of this level<br><br>**L1**                            **(0–2 marks)**<br>Little attempt to address the question; simple description<br>Data support inaccurate or lacking | 6 |

| Question | Answer | Marks |
|----------|--------|-------|
| 9(d) | **What are the limitations of Figs. 7 and 8 and what other information would be useful to those studying deposition along the course of a river?**<br><br>Both parts of the question must be addressed.<br><br>The limitations of Figs. 7 and 8 are numerous – which river(s)?, size of river(s)?, catchment area(s)?, dates?, discharge? Only bedload – what about suspended and soluble load?, Is the information applicable to other rivers? What is the nature of the depositional landforms? These are just some of the questions which candidates might legitimately raise.<br><br>Other information could include much of the above, but candidates might also discuss seasonal variations in discharge/river regimes, climate, lithology of the load, geology of the catchment area, the nature of the catchment industrial/ residential/agricultural, planning considerations.<br><br>Accept any reasonable suggestions. An indicator of quality will be a justification for the other information suggested.<br><br>A logical approach would be to address both parts of the question separately, but accept responses where the question needs to be marked as a whole.<br><br>**L3**                                         **(6–8 marks)**<br>A clear understanding of the limitations of the resources. Knowledge of other resources/information which would be of use along with justification. *Explicit reference to deposition.*<br><br>**L2**                                         **(3–5 marks)**<br>Discussion of the limitations of the resources but limited knowledge of other resources which may be of use (or vice versa). *Explicit reference to deposition may be missing or very limited.*<br><br>**L1**                                         **(0–2 marks)**<br>Little understanding of the question, perhaps simple description of the data. Support is inaccurate or lacking. | 8 |

| Question | Answer | Marks |
|---|---|---|
| 10(a) | **Study Fig. 9, which shows the channel gradient and cross-sectional area along the course of a river.**<br><br>**Describe the relationship between channel gradient and cross-sectional area shown in Fig. 9.**<br><br>The relationship is an inverse one – this with some data support would reach the top of L2. Indicators of quality would include discussion of the weak nature of the correlation and the identification of the anomaly at 0.081. It is possible to argue that for gradients in excess of 0.04 there is no relationship.<br><br>**L3**                                      **(4–5 marks)**<br>Goes beyond the inverse relationship to describe the weakness of the correlation and the outlier at 0.081<br><br>**L2**                                      **(2–3 marks)**<br>A valid attempt to address the question. Evidence is used to support the points made. The inverse nature of the relationship is identified along with some data support.<br><br>**L1**                                      **(0–1 marks)**<br>Little attempt to answer the question or describe the information shown on Fig. 6. | **5** |
| 10(b) | **From your wider study of fluvial geomorphology, to what extent have changes made by humans in one part of a river had effects elsewhere on the river's course?**<br><br>Quality of argument will be the main discriminator rather than breadth of knowledge.<br><br>An opportunity here for candidates to use the knowledge they've gained from their individual research. Any point of view is acceptable, but credit well those who are able to support their view with useful exemplar support. The best candidates will address the evaluative aspect of the question – this will indicate L3. Candidates must use the evidence/case studies presented to arrive at a robust and balanced judgement.<br><br>**L3**                                  **(8–10 marks)**<br>A clear focus on the question with appropriate exemplar support. There is a sophisticated understanding. The evaluation is well supported by exemplar material.<br><br>**L2**                                    **(5–7 marks)**<br>Expresses a view and provides some support. Sound knowledge and understanding, perhaps overall lacking depth. May be limited in range or in explanation or in exemplification.<br><br>**L1**                                    **(0–4 marks)**<br>The approach is largely descriptive and superficial with little or no attempt to address the question. Little exemplar support. | **10** |

| Question | Answer | Marks |
|---|---|---|
| 11 | **With reference to your own investigation of fluvial geomorphology, assess the considerations you took into account when establishing a plan for conducting your investigation.** <br><br> **Begin by stating the question or hypothesis that you investigated.** <br><br> Answers should be based firmly on their own investigations, quoting examples drawn from this. <br><br> Clearly, much depends on the investigation. The syllabus specifies the following general points: <br><br> • establish the data needed to examine the question/hypothesis posed <br> • establish appropriate strategies and methods for collecting the necessary data (including sampling where appropriate) <br> • understand limitations imposed by resources <br> • appreciate and minimise potential risks in undertaking research. <br><br> Candidates are likely to express their discussions in terms of, for example, scale, location, availability of resources (equipment, manpower) and time considerations. <br><br> The question asks candidates to assess – this will be an indicator of quality. <br><br> **L4**                              **(13–15 marks)** <br> The candidate displays a high order understanding. Addresses the evaluative aspect of the question in a mature and cogent fashion. The points made are well supported with examples drawn from the candidate's own investigation. <br><br> **L3**                              **(10–12 marks)** <br> Good understanding of what should be taken into consideration. The answer makes appropriate reference to the candidate's own investigation. Focused on the question but the evaluation is limited or superficial. <br><br> **L2**                              **(7–9 marks)** <br> Answer is focused on the candidate's own investigation. Describes some of the considerations, but in only a superficial fashion. Largely descriptive with little relevance to the question as set might just reach this level. <br><br> **L1**                              **(0–6 marks)** <br> Discussion lacks detail. Perhaps descriptive, with only piecemeal comments. Little reference to candidate's own investigation. | 15 |

| Question | Answer | Marks |
|---|---|---|
| 12 | **With reference to your own investigation of fluvial geomorphology, how far were you able to explain all your findings?**<br><br>**Begin by stating the question or hypothesis that you investigated.**<br><br>Answers should be based firmly on their own investigations, quoting examples drawn from this.<br><br>Clearly, much depends on the investigation. Candidates should be aware of the limitations of their investigation (e.g. spatial, temporal, scale, methodology) and the interplay between a range of factors, some of which may be unknown.<br><br>In terms of evaluation a range of responses is acceptable from 'to a large extent' to 'to a small extent' depending upon the investigation. The key point is that the evaluation must be supported by the evidence presented.<br><br>An acceptable approach would be to discuss the findings that can be confidently explained, those for which an explanation is possible and those for which there appears to be no explanation. Such an approach would then allow a meaningful evaluation to be made.<br><br>**L4**                               **(13–15 marks)**<br>The candidate displays a high order understanding of the extent to which all the findings could be explained. There is good support drawn from the investigation. Evaluation to the fore.<br><br>**L3**                               **(10–12 marks)**<br>Good understanding of the extent to which all the findings could be explained. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question.<br><br>**L2**                               **(7–9 marks)**<br>More focused on the candidate's own investigation. Describes the findings, but in only a superficial fashion. May focus on just those findings which can be explained.<br>Largely descriptive with little relevance to question will just reach this level.<br><br>**L1**                               **(0–6 marks)**<br>Discussion lacks detail. Perhaps weak description only, with occasional piecemeal comments about the findings. Little reference to candidate's own investigation. | 15 |