



Cambridge Pre-U

GEOGRAPHY

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Paper 4 Research Topic

May/June 2023

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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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.

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.

GENERIC MARKING PRINCIPLE 2:

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

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.

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.

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).

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.

Section A: Central Business Districts

Answer **three** questions:
Question 1, Question 2
and **either** Question 3 **or** Question 4

Question	Answer	Marks
1(a)	<p>Study Fig. 1.1, which shows pedestrian counts at three locations within different zones of the Central Business District (CBD) of a major UK city for a 24-hour period in June 2019.</p> <p>Giving evidence from Fig. 1.1, state the range of the pedestrian counts for the education and administration zone.</p> <p>1 mark each for each of the following:</p> <ul style="list-style-type: none"> • peak 24 (14:00), min 0 (04:00) • range = 24 <p>For 2 marks candidates must give evidence, as well as the correct value for the range.</p>	2
1(b)	<p>Contrast the pedestrian counts for the zone of clubs, bars and restaurants with the zone of retail and offices between 12:00 hours and 00:00 hours shown in Fig. 1.1.</p> <p>Accept any valid contrasts at 1 mark for each complete contrast. No credit for any comments before 12:00 or after 00:00. If no reference to Fig. 1.1 (times or number of people) maximum 3 marks.</p> <p>Possible contrasts might include:</p> <ul style="list-style-type: none"> • At 14:00 clubs, bars and restaurants much lower peak than retail and offices (15 v 65) • Clubs, bars and restaurants rises from 18:00 to midnight, retail and offices decreases • At midnight clubs, bars and restaurants peaks at 55, retail and offices at minimum (6) • Clubs, bars and restaurants much slower increase/decrease from midday to 18:00 • Overall for clubs, bars and restaurants there is an increase over the period from 10 to 55; for retail and offices there is an overall decrease from 65 to 6 <p>Stronger use of data will include clear reference to both the time and the number of pedestrians.</p>	4

Question	Answer	Marks
1(c)	<p>Study Fig. 1.2, which shows the popularity of activities in selected areas of the CBD of the city at night-time.</p> <p>Using Fig. 1.2, compare the popularity of the activities in the different areas of the CBD.</p> <p>Accept any reasonable comparisons which could be valid, but there must be clear reference to/support from Fig. 1.2.</p> <p>The following comparisons might be made:</p> <ul style="list-style-type: none"> • Restaurant/pub dining most popular in eastern fringe and core (42 and 43%), less so in western and southern fringe of CBD (35 and 34%) • Core of CBD least popular for nightclubs (6%) • Meeting friends most popular in core and western fringe of CBD (24%), less so in eastern and southern fringe parts of the CBD (17 and 16%) • Nightclubs much more popular in southern fringe (35%) than other areas – western fringe (22%), core (6%), eastern fringe (11%) <p>Level 3 (5–6 marks) Clearly addresses the comparison aspect of the question. Accurate data support from Fig. 1.2 to support the comparisons.</p> <p>Level 2 (3–4 marks) Some attempt at a comparison, but they may be incomplete or address only one side of the comparison. There may be some data support at the top end of this level.</p> <p>Level 1 (0–2 marks) Little attempt to address the question; simple description. Data support inaccurate or lacking.</p>	6

Question	Answer	Marks
1(d)	<p>Assess the value of Figs. 1.1 and 1.2 to those studying the night-time economy in the CBDs of towns and cities.</p> <p>An opportunity for candidates to explore the strengths and limitations of the two figures provided in the context of the night-time economy of CBDs. An approach based on sustainable management principles would enable the value of these figures to be more easily judged.</p> <p>The focus of the response should be the value of the figures, rather than the value of the data; strengths of Figs. 1.1 and 1.2 are the good visual impression and the ease of comparison.</p> <p>The phrase ‘assess the value’ allows candidates to address not only what is there but also what isn’t e.g. Fig. 1.1, was the 24-hr period during a weekday or weekend in June? Fig. 1.2 has no date and doesn’t define what constitutes ‘night-time’.</p> <p>A range of other information would also be useful:</p> <ul style="list-style-type: none"> • Social and economic characteristics of the people surveyed • Ease of access • Car parking available • Public transport options • Planning issues and grants available from local and national government • Number of jobs created • Financial information (e.g. annual turnover of businesses) • A map <p>The command word ‘assess’ requires an assessment to be made and the best answers will address this by considering the advantages and limitations of the figures and then producing an assessment of their usefulness.</p> <p>Level 3 (6–8 marks) A clear understanding of the strengths and limitations of the figures with evaluation to the fore. Knowledge of other resources/information which would be of use. Mature assessment.</p> <p>Level 2 (3–5 marks) Discussion of the pros and cons of the figures but assessment weakly developed. Very limited knowledge of other resources which may be of use. Provides support for some observations.</p> <p>Level 1 (0–2 marks) Little understanding of the question, perhaps simple description of the data. Support is inaccurate or lacking.</p>	8

Question	Answer	Marks
2(a)	<p>Study Figs. 2.1 and 2.2. Fig. 2.1 shows Northumberland Street in the CBD of Newcastle upon Tyne in 1979 and Fig. 2.2 shows the same view in 2016.</p> <p>Using Figs 2.1 and 2.2, suggest ways in which the changes shown between 1979 and 2016 have made Northumberland Street more sustainable.</p> <p>Only 5 marks available so look for links to sustainability.</p> <p>Accept points which are subjective and could be argued either way – key is the link to sustainability. Points made might include:</p> <ul style="list-style-type: none"> • Pedestrianisation, no buses, cars, vans, parking spaces – less noise and air pollution • Planting of trees – cleaner air • Modern shop fronts – more attractive • Low profile seating for pedestrians – more attractive • Buskers add ambiance and enhance the overall environmental quality/relaxed experience of the area in 2016 rather than a crowded pavement to walk through in 1979 <p>Level 3 (4–5 marks) Clear and detailed descriptions with links to sustainability. The figures are well used to support the points.</p> <p>Level 2 (2–3 marks) A valid attempt to address the question. The descriptions are weakly supported or incomplete. Limited evidence from the figures to support the points made.</p> <p>Level 1 (0–1 marks) Little attempt to address the question; faulty use of the figures.</p>	5

Question	Answer	Marks
2(b)	<p>‘Economic factors have been the main causes of recent change in the CBDs of towns and cities.’</p> <p>From your wider study of Central Business Districts, how far do you agree?</p> <p>Given the mark and time allocation (18 mins), we can’t expect a comprehensive answer. Quality of argument will be the main discriminator rather than breadth of knowledge.</p> <p>An opportunity here for candidates to use the knowledge they’ve gained from their individual research.</p> <p>Expect reference to the role of economic, environmental and political factors in causing change. Fig. 2.1 suggests we should accept the 1970s onwards for ‘recent’.</p> <p>Credit well those who are able to support their discussion with useful exemplar support and address the ‘main causes’ aspect of the question as well as the ‘how far do you agree?’ evaluation.</p> <p>There are a wide range of valid approaches and much will depend on the example towns and cities chosen. Some avenues which may be explored include the decision making by national brands, available funding, the role/involvement of local and national governments.</p> <p>Level 3 (8–10 marks) A clear focus on the question with appropriate exemplar support. Evaluation is addressed. There is a sophisticated understanding of the role of a number of factors. The answer is well supported.</p> <p>Level 2 (5–7 marks) Provides a discussion, but mostly focused on economic factors alone. Provides some support. Sound knowledge and understanding, but overall lacking depth. May be limited in range, in explanation or in exemplification.</p> <p>Level 1 (0–4 marks) The approach is largely descriptive and superficial with little or no attempt to address the question. Little exemplar support.</p>	10

Question	Answer	Marks
3	<p>With reference to your own study of Central Business Districts (CBDs), consider the extent to which you were successful in overcoming the problems you encountered during your collection of primary data.</p> <p>Begin by stating the question or hypothesis that you investigated.</p> <p>Answers should be based firmly on their own investigations, quoting examples drawn from this.</p> <p>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 are acceptable from ‘to a large extent’ to ‘to a small extent’ depending upon the investigation.</p> <p>Level 4 (13–15 marks) 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.</p> <p>Level 3 (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.</p> <p>Level 2 (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.</p> <p>Level 1 (0–6 marks) Discussion lacks detail. Perhaps descriptive only, with only piecemeal comments. Little reference to candidate’s own investigation.</p>	15

Question	Answer	Marks
4	<p>With reference to your own study of Central Business Districts (CBDs), to what extent were you able to explain all your findings?</p> <p>Begin by stating the question or hypothesis that you investigated.</p> <p>Answers should be based firmly on their own investigations, quoting examples drawn from this.</p> <p>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.</p> <p>In terms of evaluation a range of responses are 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.</p> <p>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.</p> <p>Level 4 (13–15 marks) 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.</p> <p>Level 3 (10–12 marks) 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.</p> <p>Level 2 (7–9 marks) 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. Largely descriptive with little relevance to question will just reach this level.</p> <p>Level 1 (0–6 marks) Discussion lacks detail. Perhaps weak description only, with occasional piecemeal comments about the findings. Little reference to candidate’s own investigation.</p>	15

Section B: Retail Patterns

Answer **three** questions:
Question 5, Question 6
and **either** Question 7 **or** Question 8

Question	Answer	Marks
5(a)	<p>Study Fig. 5.1, which shows online shopping frequency, by age group, for May, June and July 2019 in Great Britain.</p> <p>Giving evidence from Fig. 5.1, which age group showed the largest percentage difference between its lowest and highest online shopping frequency?</p> <p>25 to 34 age group 1 mark From 9% to 46% or range of 37% 1 mark</p> <p>For 2 marks candidates must give evidence, as well as the correct value for the range.</p>	2
5(b)	<p>Using Fig. 5.1, compare online shopping frequency of the 35–44 age group with that of the 65+ age group.</p> <p>Accept any valid comparisons (both sides must be present) at 1 mark each. If no data from the figure is used to support, maximum 3 marks.</p> <p>Some points which might be made:</p> <ul style="list-style-type: none"> • Largest frequency is eleven times or more for 35–44 compared with three to five times for 65+ • Smallest is once or twice for 35–44 compared with eleven times or more for 65+ • Six to ten times about equal for both (22) • Once or twice much larger for 65+ (10 v 29) 	4

Question	Answer	Marks
5(c)	<p>Study Fig. 5.2, which shows online purchases, by type and age group, for May, June and July 2019 in Great Britain.</p> <p>Using Fig. 5.2, compare the online purchases by the different age groups for the types of purchase shown.</p> <p>There are only 6 marks available. Accept any valid comparisons.</p> <p>Some points which might be made:</p> <ul style="list-style-type: none"> • 65+ age group make fewest purchases in all three types of goods; they are also most consistent across the types of goods (ranging from 26% to 33%) • Clothes and sports goods most frequent purchases for 16–24 and 25–34 (79 and 80% respectively) – more than twice that of the 65+ age group • 55–64 age group also consistent across the three types of goods (ranging from 41 to 49%) • 45–54 also fairly consistent across the three types of goods (ranging from 51 to 65%) <p>The best answers will address all types of goods and all the age groups shown.</p> <p>Level 3 (5–6 marks) Clear and detailed account well focused on the question. The comparisons will be well supported with clear reference to Fig. 5.2</p> <p>Level 2 (3–4 marks) Some useful points with some reference/support from Fig. 5.2. Support from Fig. 5.2 may be incomplete.</p> <p>Level 1 (0–2 marks) Little attempt to address the question; simple description with no reference to the question. Data support poorly chosen or inaccurate or lacking.</p>	6

Question	Answer	Marks
5(d)	<p>Evaluate the usefulness of Figs. 5.1 and 5.2 to a company considering expansion of its online shopping operations.</p> <p>One approach would be to consider the pros and cons of the two figures which would enable candidates to make a meaningful assessment.</p> <p>The focus of the response should be the value of the figures, rather than the value of the data.</p> <p>Some points which might be made include:</p> <ul style="list-style-type: none"> • Fig. 5.1 – gives a good visual impression of the frequency of shopping over three months. However, there is no data for the rest of the year and the class intervals in the key are uneven (eleven times or more seems quite arbitrary and covers a huge range). Additionally, types of online shopping (e.g. by mobile, tablet, desktop, laptop etc.) are not covered, nor is the time of day when purchases are made. • Fig. 5.2 – the graph gives a good visual impression and has a date. However, types of goods appear narrow e.g. there are no white goods or electricals shown. <p>Clearly, other data would be useful (such as consumer behaviour). Accept any reasonable suggestions – there may well be reference to Covid-19. This, of course, is relevant but not required for full marks.</p> <p>A good answer will make a judgement of the value of the figures to the decision-making process, supported by the comments made in the discussion.</p> <p>Level 3 (6–8 marks) A clear understanding of the strengths and limitations of the figures with evaluation to the fore. Knowledge of other resources/information which would be of use. Mature assessment.</p> <p>Level 2 (3–5 marks) Discussion of the pros and cons of the figures but assessment weakly developed. Very limited knowledge of other resources which may be of use. Provides support for some observations.</p> <p>Level 1 (0–2 marks) Little understanding of the question, perhaps simple description of the data. Support is inaccurate or lacking.</p>	8

Question	Answer	Marks
6(a)	<p>Study Fig. 6.1, which shows the change in distance to the nearest bank branch in Wales between 2008 and 2018.</p> <p>‘Bank closures in Wales have caused changes in distance to the nearest bank branch. These changes have a distinct pattern.’</p> <p>How far does Fig. 6.1 support this statement?</p> <p>Only 5 marks are available so do not expect much depth. Accept a judgement anywhere on the spectrum as long as it is supported by the evidence.</p> <p>Some points which might be made:</p> <ul style="list-style-type: none"> • The places where branches have become nearer are largely in the South (e.g. Swansea) • Branches have also become nearer in small areas north-west of Wrexham • Elsewhere no change or branches have become much further (several places which are more than 8km further); there is some evidence of a North/South divide • However, there appears to be a ‘ridge’ of branches becoming more than 8km further running North/South (e.g. in central Wales) so perhaps a North/South axis of symmetry is visible <p>Level 3 (4–5 marks) Clear and detailed discussion with assessment to the fore. The figure is well used to support the points made about the pattern identified.</p> <p>Level 2 (2–3 marks) A valid attempt to address the question. Evidence is used to support the points made. The assessment is superficial/thinly supported. Description alone might just reach this level.</p> <p>Level 1 (0–1 marks) Little attempt to answer the question or describe the information shown on the figure.</p>	5

Question	Answer	Marks
6(b)	<p>'In the current continuously changing retail environment, only retailers who can adapt will survive.'</p> <p>From your wider study of retail patterns, to what extent do you agree?</p> <p>Given the mark and time allocation (18 mins), we can't expect a comprehensive answer. Quality of argument will be the main discriminator rather than breadth of knowledge.</p> <p>An opportunity here for candidates to use the knowledge they've gained from their individual research.</p> <p>Good answers will consider a range of adaptations (e.g. greater online presence, delivery services, relocating away from city centres). Reference to Covid-19 is acceptable but not required for full marks. Much will depend on the examples chosen.</p> <p>Clearly, not all adaptations are required for a good answer. Two alone, if exceptionally well done and supported, could gain full marks. Good responses will be characterised by the quality of assessment and appropriate exemplar support.</p> <p>Level 3 (8–10 marks) A clear focus on the question with appropriate exemplar support. There is a sophisticated understanding, addressing the assessment requirement of the question. Evaluation to the fore.</p> <p>Level 2 (5–7 marks) Expresses a view and provides some support. Sound knowledge and understanding, perhaps overall lacking depth. May be limited in explanation or in exemplification.</p> <p>Level 1 (0–4 marks) The approach is largely descriptive and superficial with little or no attempt to address the question. Little exemplar support.</p>	10

Question	Answer	Marks
7	<p>With reference to your own study of retail patterns, consider the extent to which you were successful in overcoming the problems you encountered during your collection of primary data.</p> <p>Begin by stating the question or hypothesis that you investigated.</p> <p>Answers should be based firmly on their own investigations, quoting examples drawn from this.</p> <p>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 are acceptable from ‘to a large extent’ to ‘to a small extent’ depending upon the investigation.</p> <p>Level 4 (13–15 marks) 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.</p> <p>Level 3 (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.</p> <p>Level 2 (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.</p> <p>Level 1 (0–6 marks) Discussion lacks detail. Perhaps descriptive only, with only piecemeal comments. Little reference to candidate’s own investigation.</p>	15

Question	Answer	Marks
8	<p>With reference to your own study of retail patterns, to what extent were you able to explain all your findings?</p> <p>Begin by stating the question or hypothesis that you investigated.</p> <p>Answers should be based firmly on their own investigations, quoting examples drawn from this.</p> <p>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.</p> <p>In terms of evaluation a range of responses are 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.</p> <p>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.</p> <p>Level 4 (13–15 marks) 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.</p> <p>Level 3 (10–12 marks) 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.</p> <p>Level 2 (7–9 marks) 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. Largely descriptive with little relevance to question will just reach this level.</p> <p>Level 1 (0–6 marks) Discussion lacks detail. Perhaps weak description only, with occasional piecemeal comments about the findings. Little reference to candidate’s own investigation.</p>	15

Section C: Environmental Degradation

Answer **three** questions:
Question 9, Question 10
and **either** Question 11 **or** Question 12

Question	Answer	Marks
9(a)	<p>Study Fig. 9.1 which shows concentrations of microplastic particles in the water of the River Tame, UK, 2019.</p> <p>Giving evidence from Fig. 9.1, state the range of microplastic particles per litre of water.</p> <ul style="list-style-type: none"> • 3.7 = 1 mark • 0.7 <u>to</u> 4.4 = 1 mark <p>For 2 marks candidates must give evidence, as well as the correct value for the range.</p>	2
9(b)	<p>Describe the variation in concentrations of microplastic particles from upstream to downstream shown in Fig. 9.1.</p> <p>Accept any valid descriptions. If no data support from the figure (particles per litre) maximum 3 marks. Stronger data support will include both the amount of microplastics and the site number.</p> <p>Valid points might include:</p> <ul style="list-style-type: none"> • Fluctuates • Peak of 4.4 at site 6 • Two other sub-peaks at sites 11 and 14 (2.9 and 3.2 respectively) • From sites 1 to 5 fairly constant levels (1.3 to 2.3, near the mean) • Sites 7 and 8 are low (8 has the minimum at 0.7) • Rise from sites 8 to 11, large drop to sites 12 then 13, then large rise to site 14 	4

Question	Answer	Marks
9(c)	<p>Study Fig. 9.2, which shows concentrations of microplastic particles, by type, in channel bed sediments in the River Tame, UK, 2019.</p> <p>Using Fig. 9.2, compare the changes in the concentration of fragments with the changes in the concentration of microbeads across the sample sites shown.</p> <p>Accept any reasonable valid comparisons, but there must be clear reference to/support from Fig. 9.2.</p> <p>Some points that could be made include:</p> <ul style="list-style-type: none"> • Sites 1 and 14 have neither microbeads nor fragments • Sites 2 and 3 have no microbeads but there are fragments • Sites 4 and 12 are the only two with microbeads but no fragments • Microbeads peak at site 7, fragments at sites 6 and 7 • Both show irregular decline from peak at site 7 upstream and downstream <p>Level 3 (5–6 marks) Clear comparison with accurate support from Fig. 9.2.</p> <p>Level 2 (3–4 marks) Some attempt at making comparisons. Provides support from Fig. 9.2 at the top end of this level.</p> <p>Level 1 (0–2 marks) Little attempt to address the question; simple description. Data support inaccurate or lacking.</p>	6

Question	Answer	Marks
9(d)	<p>Assess the value of Figs 9.1 and 9.2 to those responsible for monitoring water pollution in the River Tame.</p> <p>Candidates need to consider the advantages and limitations of Figs 9.1 and 9.2 before arriving at an assessment.</p> <p>The focus of the response should be the value of the figures, rather than the value of the data.</p> <p>Fig. 9.1 gives a good visual impression of pollution by microplastics and covers upstream and downstream sites. However, it is only for 2019 and there is no indication of exact locations of the sample sites or their spacing. Also, it's only for microplastics, other pollutants are not shown.</p> <p>Fig. 9.2 also gives a good visual impression, but only for 2019. Other types of pollution are not shown. Location is missing from both diagrams, as are variations throughout the year.</p> <p>Other information which would be relevant might include:</p> <ul style="list-style-type: none"> • A map to show the locations • More recent data • Other sources of pollution (e.g. water traffic) • Information about visitor numbers and seasonal patterns of numbers • Sources of pollution <p>Accept any reasonable suggestions. An indicator of quality will be a justification for the other information suggested as well as the quality of the assessment.</p> <p>Level 3 (6–8 marks) A clear assessment of the value of the figures. A structured format. Knowledge of other resources/information which would be of use along with justification.</p> <p>Level 2 (3–5 marks) Discussion of the limitations of the figures but limited knowledge of other resources which may be of use (or vice versa).</p> <p>Level 1 (0–2 marks) Little understanding of the question, perhaps simple description of the data. Support is inaccurate or lacking.</p>	8

Question	Answer	Marks
10(a)	<p>Study Fig. 10.1, which shows changes to the position of the ice front of the Larsen B Ice Shelf, Antarctica, from 1947 to 2002.</p> <p>‘The Larsen B Ice shelf has been in steady retreat since 1947’.</p> <p>How far does Fig. 10.1 support this statement?</p> <p>Only 5 marks are available so do not expect much depth. Accept a judgement anywhere on the spectrum as long as it is supported with information taken from Fig. 10.1.</p> <p>Some points which might be made:</p> <ul style="list-style-type: none"> • 1947 slight curve across the bay • Small retreat to 1961 (max 10 to 15 km) • Then advance until 1993 (of about 30 km) • Rapid retreat by January 31st 2002 (over 80 km) • From Jan 31 to March 5 2002 a very rapid retreat (about 60 km) <p>Accept any valid comments. The best answers will express a judgement about ‘steady retreat’ supported by reference to the figure.</p> <p>Level 3 (4–5 marks) A clear assessment, with focus on the evaluative nature of the question. There is good use of information from the figure.</p> <p>Level 2 (2–3 marks) A valid attempt to address the question. A limited use of evidence from the figure to support the points made. A limited evaluation.</p> <p>Level 1 (0–1 marks) Little attempt to answer the question or describe the information shown.</p>	5

Question	Answer	Marks
10(b)	<p>‘Human activities always have negative consequences for the environment.’</p> <p>From your wider study of environmental degradation, to what extent do you agree?</p> <p>Given the mark and time allocation (18 mins), we can’t expect a comprehensive answer. Quality of argument will be the main discriminator rather than breadth of knowledge.</p> <p>An opportunity here for candidates to use the knowledge they’ve gained from their individual research and stronger answers will show good evidence of this.</p> <p>Any point of view is acceptable, but credit well those who are able to support their view with useful exemplar support. The best answers will address the evaluative aspect of the question which will indicate Level 3. Candidates must use the evidence/case studies presented to arrive at a robust and balanced judgement. Positive impacts should be considered; expect many responses to focus on negative impacts alone.</p> <p>The best answers will address the phrase ‘always have negative impacts’ in the question. A wide range of contexts is acceptable. Many candidates will address some or all of air, water, noise, land and visual impacts but not all are required for full marks; two of these done particularly well could achieve full marks.</p> <p>Level 3 (8–10 marks) A clear focus on the question with appropriate exemplar support. There is a sophisticated understanding. The evaluation is well supported by exemplar material.</p> <p>Level 2 (5–7 marks) Expresses a view and provides some support. Sound knowledge and understanding, perhaps overall lacking depth. May be limited in range or in explanation or exemplification.</p> <p>Level 1 (0–4 marks) The approach is largely descriptive and superficial with little or no attempt to address the question. Little exemplar support.</p>	10

Question	Answer	Marks
11	<p>With reference to your own study of environmental degradation, consider the extent to which you were successful in overcoming the problems you encountered during your collection of primary data.</p> <p>Begin by stating the question or hypothesis that you investigated.</p> <p>Answers should be based firmly on their own investigations, quoting examples drawn from this.</p> <p>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 are acceptable from ‘to a large extent’ to ‘to a small extent’ depending upon the investigation.</p> <p>Level 4 (13–15 marks) 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.</p> <p>Level 3 (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.</p> <p>Level 2 (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.</p> <p>Level 1 (0–6 marks) Discussion lacks detail. Perhaps descriptive only, with only piecemeal comments. Little reference to candidate’s own investigation.</p>	15

Question	Answer	Marks
12	<p>With reference to your own study of environmental degradation, to what extent were you able to explain all your findings?</p> <p>Begin by stating the question or hypothesis that you investigated.</p> <p>Answers should be based firmly on their own investigations, quoting examples drawn from this.</p> <p>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.</p> <p>In terms of evaluation a range of responses are 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.</p> <p>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.</p> <p>Level 4 (13–15 marks) 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.</p> <p>Level 3 (10–12 marks) 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.</p> <p>Level 2 (7–9 marks) 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. Largely descriptive with little relevance to question will just reach this level.</p> <p>Level 1 (0–6 marks) Discussion lacks detail. Perhaps weak description only, with occasional piecemeal comments about the findings. Little reference to candidate’s own investigation.</p>	15