



Mark Scheme (Results)

January 2024

Pearson Edexcel International Advanced
Subsidiary Level in Geography (WGE02)
Paper 01: Geographical Investigations

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

January 2024

Question Paper Log Number P75605A

Publications Code WGE02_01_2401_MS

All the material in this publication is copyright

© Pearson Education Ltd 2024

General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

| Question Number | Answer | Mark |
|-----------------|--|----------|
| 1(a)(i) | <p style="text-align: center;">AO2 (2 marks)</p> <p>Label A = Cliff / Headland Label B = Notch /Cave /Wave cut notch</p> <p>Accept other valid ideas.</p> | 2 |

| Question Number | Explain one weathering process affecting this coast. Answer | Mark |
|-----------------|--|----------|
| 1(a)(ii) | <p style="text-align: center;">AO1 (2 marks)</p> <p>Award 1 mark for explaining a way and a further expansion mark, up to a maximum of 2 marks each:</p> <ul style="list-style-type: none"> • Hydrolysis/chemical weathering occurs in certain rocks with minerals that are reactive to water or chemicals in the water (1) which means that there is a loss of coherence or structure (1). • Oxidation on cliff faces where iron minerals are found in rocks (1). The 'rusting' of the iron content may cause rocks to disintegrate (1). • Freeze-thaw weathering occurs when the daytime temperature is different to the night-time temperature (1) leading to thermal stresses and internal disintegration (1). • Exfoliation occurs when the daytime and night-time temperatures are different (1). repeated expansion and contraction of the surface layers results in the gradual disintegration of the top layers (1). • Biological weathering from plant roots/ animal burrowing/ shellfish secretions (1) exploit any cracks in rocks and widen them (1). <p>Accept other valid ideas.</p> | 2 |

| Question Number | Examine how an understanding of physical processes can affect coastal management decision making. Indicative content |
|-----------------|--|
| 1(b) | <p style="text-align: center;">AO1 (6 marks) AO2 (2 marks)</p> <p>Marking instructions Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <p>AO1</p> |

- Physical processes include weathering, mass movement, erosion and deposition, wave energy (allow type and frequency). Meteorological, tectonic and geological processes are also relevant.
- The sediment cell concept of sources, transfers and sinks links the physical processes.
- Coastal managers might need to decide about development of housing, industry, agriculture, tourism and infrastructure.
- They also make decisions about protecting and stabilising coastlines from erosion, slumping and flooding from storms or tsunami for example.
- Hard engineering approaches (groynes, sea walls, rip rap, revetments, offshore breakwaters) used by coastal managers in one location are economically costly, directly alter physical processes and systems, and can affect erosion rates downdrift with consequences for people and property.
- Soft engineering approaches (beach nourishment, cliff re-grading and drainage, dune stabilisation) attempt to work with physical systems to protect coasts.

AO2

- Most would agree that an understanding of coastal processes is of considerable help to coastal management decision making.
- An understanding of erosion and deposition and flooding (as a result of storms or tsunamis) help managers plan for the present and future.
- Decisions by coastal managers to build sea defences such as groynes to protect their location have a knock-on effect downdrift, as less sediment is transported, leading to narrower beaches or erosion of depositional features like spits.
- Erosion further up a coastline produces the sediment needed for sustaining a beach downdrift.
- The sediment cell concept may help managers in understanding the links between coastal processes. However, coastal systems are very complex, and the concept is an oversimplification in both time and space, so help is partial and incomplete.
- In reality, there are many other factors coastal managers need to be aware of, including geology, topography and height above sea level, sea level rise, population density, biodiversity protection and financial matters. These make decisions complex.

| Level | Mark | Descriptor |
|---------|------|--|
| Level 0 | 0 | No acceptable response. |
| Level 1 | 1–3 | <ul style="list-style-type: none"> • Demonstrates isolated elements of geographical knowledge and understanding, some of which may be inaccurate. (AO1) • Understanding addresses a narrow range of geographical ideas. (AO1) • Understanding of geographical ideas lacks detail. (AO1) |

| | | |
|---------|-----|---|
| | | <ul style="list-style-type: none"> Applies knowledge and understanding to geographical information/ideas, with limited logical connections/relationships. (AO2) |
| Level 2 | 4-6 | <ul style="list-style-type: none"> Demonstrates geographical knowledge and understanding, which is mostly relevant and may include some inaccuracies. (AO1) Understanding addresses a range of geographical ideas. (AO1) Understanding of geographical ideas is not fully detailed and/or developed. (AO1) Applies knowledge and understanding to geographical information/ideas logically to find some relevant connections/relationships. (AO2) |
| Level 3 | 7-8 | <ul style="list-style-type: none"> Demonstrates accurate and relevant geographical knowledge and understanding throughout. (AO1) Understanding addresses a broad range of geographical ideas. (AO1) Understanding of the geographical ideas is detailed and fully developed. (AO1) Applies knowledge and understanding to geographical information/ideas logically to find fully relevant connections/relationships. (AO2) |

| Question Number | Identify two possible problems caused by landfill sites such as this. Answer | Mark |
|-----------------|---|----------|
| 2(a) | <p style="text-align: center;">AO2 (2 marks)</p> <p>Award 1 mark for each idea:</p> <ul style="list-style-type: none"> Litter spread by wind Noise from compacting machines/delivery vehicles Unpleasant smells from waste Air pollution from dust Transport congestion from large vehicle movements Unsightly piles of rubbish / soil Loss of biodiversity/damage to natural habitats Methane from decay of food waste adds to greenhouse gases Soil becomes toxic and cannot be used for other purposes Health problems for workers <p>Note – must be related to evidence in the photograph Accept other valid ideas.</p> | 2 |

| Question Number | Explain one problem for people living in cities with high levels of traffic congestion. Answer | Mark |
|-----------------|--|----------|
| 2(b) | <p style="text-align: center;">AO1 (2 marks)</p> <p>Award 1 mark for explaining a problem and further expansion mark, up to a maximum of 2 marks:</p> <ul style="list-style-type: none"> • Can lead to a wide range of illnesses (lung illness, heart attacks, asthma) (1) which reduce life expectancy (1). • Dangers in crossing roads/for cyclists(1) so people may be runover and injured (1). • Delays in journeys as there is so much traffic (1) so people are late for work/school/appointments/less time with family (1). • Can lead to a wide range of linked diseases (1) which cause long term health effects/ which reduce people's ability to work / earn money/do well at school (1). • Increased costs for businesses /delivery drivers (1) as journey times are longer (1). <p>The problem identified must relate to people in cities specifically rather than generally. E.g. Climate change.</p> <p>Accept other valid ideas.</p> | 2 |

| Question Number | Examine the causes of the social and economic inequalities found in developing world cities. Indicative content |
|-----------------|--|
| 2(c) | <p style="text-align: center;">AO1 (6 marks) AO2 (2 marks)</p> <p>Marking instructions</p> <p>Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance</p> <p>The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <p>AO1</p> <ul style="list-style-type: none"> • All cities display some level of social and economic inequalities. Some are more pronounced than others, depending on their national and regional contexts. • Many developing world cities are seeing very high urban growth rates, especially in S.E Asia. • Today, in cities of the developing world inequality is becoming increasingly spatialised. • There are historical and cultural reasons for economic and social inequality. • Causes of inequalities include migration to urban centres, high rates of internal population growth, discrimination, actions of TNCs, government actions. |

- Minority groups may experience inequalities of access to employment, income, housing, education due to discrimination.
- Women and disabled people may experience further inequalities.
- The development of gated communities and housing is both a reflection of and response to income inequality.

AO2

- In developing world cities, economic inequality drives social inequality so the two are very closely linked together.
- Economic inequalities include income, access to employment (formal/informal), government spending.
- Social inequalities include access to housing, education, health, energy, transport, internet, water, sanitation, food.
- Causes of inequalities might include:
- Access to wealth creates an economic hierarchy influencing access to resources.
- High urban growth rates due to rural-urban migration and natural increase create problems with shortage of housing, water, energy, food, education and other services. Congestion and waste disposal affect all.
- Income inequality leads to social inequalities in terms of life expectancy, literacy rates and access to housing.
- Differential access to employment contributes to variations in income and also to whether employment is formal or informal.
- Informal employment may involve low pay and few rights for workers, whereas formal work involves contracts and possibly a minimum wage.
- The degree of success of governance is a major driver of different types of inequality, especially when linked to political corruption.
- TNCs can bring employment and wages to many but may also exploit workers, worsening social inequalities, partly through environmental pollution.
- The lasting results of colonial exploitation may be explained as a cause of inequalities.

Economic and social inequalities should be covered but they may be discussed together by candidates as they intersect and overlap.

| Level | Mark | Descriptor |
|---------|------|--|
| Level 0 | 0 | No acceptable response. |
| Level 1 | 1-3 | <ul style="list-style-type: none"> • Demonstrates isolated elements of geographical knowledge and understanding, some of which may be inaccurate. (AO1) • Understanding addresses a narrow range of geographical ideas. (AO1) • Understanding of geographical ideas lacks detail. (AO1) • Applies knowledge and understanding to geographical information/ideas, with limited logical connections/relationships. (AO2) |
| Level 2 | 4-6 | Demonstrates geographical knowledge and understanding, which is mostly relevant and may include some inaccuracies. (AO1) |

| | | |
|---------|-----|--|
| | | <ul style="list-style-type: none"> • Understanding addresses a range of geographical ideas. (AO1) • Understanding of geographical ideas is not fully detailed and/or developed. (AO1) • Applies knowledge and understanding to geographical information/ideas logically to find some relevant connections/relationships. (AO2) |
| Level 3 | 7-8 | <ul style="list-style-type: none"> • Demonstrates accurate and relevant geographical knowledge and understanding throughout. (AO1) • Understanding addresses a broad range of geographical ideas. (AO1) • Understanding of the geographical ideas is detailed and fully developed. (AO1) • Applies knowledge and understanding to geographical information/ideas logically to find fully relevant connections/relationships. (AO2) |

| Question Number | Explain how you selected the title or question for your fieldwork investigation Answer | Mark |
|-----------------|--|----------|
| 3(a) | <p style="text-align: center;">AO3 (3 marks)</p> <p>NB: <i>the aim / question / hypothesis provides a context for the investigation and the subsequent parts that follow – no credit for this.</i></p> <p>Award 1 mark for identifying one reason for the selection of the chosen question and further expansion marks up to a maximum of 3 marks. Nature of question, title or hypothesis will vary depending on the location as well as the context of the investigation.</p> <ul style="list-style-type: none"> • Identification of a local change that has taken place (1) and designing an investigation to understand causes / threats / impacts (1) and therefore helped understand the expected pattern before investigating (1). • Identification of a local issue (1) and designing an investigation to understand its causes/effects (1) through using local knowledge and expertise to provide a clear purpose to the investigation (1). • Use of a model e.g. bid rent model / plant succession (1) used as a basis for comparing a real-world situation to theory (1) and an opportunity to challenge the assumption (1). • Literature surveys reviewed models/ Secondary data provided background (1) to understand more about a location and the issues to be investigated (1) and the suitability of possible locations (1). <p>Note the title / question is just to provide a context for the investigation and the subsequent parts that follow. There is no separate credit for this.</p> | 3 |

| | | |
|--|---|--|
| | Accept other valid ideas, or relevant combinations of the ideas above. Allow more than one reason. | |
|--|---|--|

| Question Number | Explain how you used one quantitative data collection method in your fieldwork investigation. Answer | Mark |
|-----------------|---|----------|
| 3(b) | <p style="text-align: center;">AO3 (3 marks)</p> <p>Award 1 mark for explaining the use of one quantitative data collection technique and further expansion marks up to a maximum of 3 marks.</p> <p>Nature of quantitative data collection techniques utilised will vary depending on the location as well as the context of the investigation.</p> <ul style="list-style-type: none"> • Environmental quality scores from a number of respondents were used (1) to find out about attitudes towards rebranding in the city (1) and these were then averaged for each area to produce a total area score (1). • Questionnaires (closed questions) were used to gauge opinions from stakeholders (1) such as impacts of change in a city (1) and these scores were then totalled to give an overall perception index (1). • Frequency of plant types were recorded along a transect (1) to find out about changes in plant types within that coastal ecosystem (1) and the results were then collated with other groups to develop an overall index (1) . • Traffic loudness was recorded in dB using our mobile phones (1). There was a dedicated app which allowed this to be carried out every 100m along a transect (1) and the results were then used to develop and average score for each road junction and location (1). • Systematic sampling at regular intervals (1) was used to collect data about the condition of a footpath (1) so that we could measure the degree of change along the transect and reach a conclusion (1). • Quantitative data collected may allow for the use of statistical techniques (1) to test for correlation between two variables (1) and draw conclusions about the Significance of the results.(1) <p>Accept other valid ideas.</p> | 3 |

| | |
|------------------------|--|
| Question number | Explain how you designed your fieldwork to make sure that the data collected was accurate. Answer |
| 3(c) | <p style="text-align: center;">AO3 (6 marks)</p> <p>Marking instructions Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance Content depends on a student's choice of research question. Methodology and design (which overlap) may include the following ideas:</p> <ul style="list-style-type: none"> • Sampling frequency, i.e. number of sites and their spacing (sampling framework and approach: systematic, stratified, random etc). • Recording sheet design, quantitative vs qualitative information. • Group and individual data, how it is used to support models and theories. <p>Accuracy and reliability are about the amount and quality of the data. They involve how much the data can be trusted and whether it has been collected in such a way that the risk of bias has been reduced or managed.</p> <p>The nature of responses will be heavily dependent on the context of the fieldwork and the environment in which it was undertaken. However, examiners should reward for detailed clear and specific data and information which are supported with depth and detail in terms of how accurate and reliable the data is. Allow discussion of reasons which reduced the accuracy of the data.</p> <p>Accept other valid ideas.</p> |

| Level | Mark | Descriptor |
|----------------|-------------|---|
| | 0 | No rewardable material. |
| Level 1 | 1–2 | <ul style="list-style-type: none"> • Limited understanding of the relationships between geographical questions and the background information, geographical context and research question (AO3) • Uses a limited range of fieldwork research skills and techniques to obtain information that may link to, but not support, the investigation of the research question. (AO3) • Limited evidence of an ability to draw conclusions and the evaluation is simplistic, limited to one stage in the route to enquiry. (AO3) |
| Level 2 | 3–4 | <ul style="list-style-type: none"> • Some understanding of the relationship between the background information, geographical context and research question (AO3) |

| Level | Mark | Descriptor |
|----------------|------------|--|
| | | <ul style="list-style-type: none"> • Uses some fieldwork research skills and techniques to obtain information that may link to, but not support, the investigation of the research question. (AO3) • Some evidence of an ability to draw conclusions and the evaluation is relevant, but restricted to one or two stages in the route to enquiry. (AO3) |
| Level 3 | 5–6 | <ul style="list-style-type: none"> • A full understanding of the relationship between the background information, geographical context and research question (AO3) • Evaluates fieldwork research skills and techniques to obtain information that links to or supports the investigation of the research question. (AO3) • Clear evidence of an ability to draw conclusions and the evaluation is full, across a number of stages in the route to enquiry. (AO3) |

| Question number | Evaluate the success of the techniques used to present and analyse the results from your fieldwork investigation. Answer |
|-----------------|---|
| 3(d) | <p style="text-align: center;">A03 (12 marks)</p> <p>Marking instructions Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance Content depends on students' choice of research question. Evaluation of success in relation to presentation and analysis could include some the following:</p> <ul style="list-style-type: none"> • The nature of initial research to inform the context of the enquiry. • Design of sampling framework: number of sites, spacing, sample sizes, sampling method – linked to specific methods of data collection. These will affect presentation and analysis. • Choice of presentation techniques could be discussed – reliability, utility, function. • Choice of analysis tools – appropriateness given data type, sample size, error, bias and other factors that could affect the quality of data outcome. • Inaccessibility of sites / lack of ability collect data due to time of day, seasons, or unanticipated hazards such as bad weather. These may impact on either presentation and / or analysis. • Hand-drawn /computer graphs used to compare data sets or to locate them on a base map/GIS to show spatial patterns. • Use of simple statistics to look for patterns or relationships, for example averages and standard deviation, range and interquartile range and many others. • Use of Spearman's Rank or other statistical tests measure whether patterns are significant or could have occurred by chance. |

| | |
|--|---|
| | <ul style="list-style-type: none"> • Photos and annotations can be used to show change. <p>Nature of responses will be heavily dependent on the context of the fieldwork and the environment in which it was undertaken. However, examiners should reward for detailed clear and specific data and information which are supported with depth and detail in terms of factual accuracy and realism.</p> |
|--|---|

| Level | Mark | Descriptor |
|----------------|-------------|--|
| | 0 | No rewardable material. |
| Level 1 | 1–4 | <ul style="list-style-type: none"> • Limited understanding of the relationships between geographical questions and the background information, geographical context and research question (AO3) • Uses a limited range of fieldwork research skills and techniques to obtain information that may link to, but not support, the investigation of the research question. (AO3) • Limited interpretation, analysis based on the data / information collected. (AO3) • Limited evidence of an ability to draw conclusions and the evaluation is simplistic, limited to one stage in the route to enquiry. (AO3) |
| Level 2 | 5–8 | <ul style="list-style-type: none"> • Some understanding of the relationship between the background information, geographical context and research question (AO3) • Uses some fieldwork research skills and techniques to obtain information that may link to, but not support, the investigation of the research question. (AO3) • Interpretation and analysis based on the data / information collected form part of the response (AO3) • Some evidence of an ability to draw conclusions and the evaluation is relevant, but restricted to one or two stages in the route to enquiry. (AO3) |
| Level 3 | 9–12 | <ul style="list-style-type: none"> • A full understanding of the relationship between the background information, geographical context and research question (AO3) • Evaluates fieldwork research skills and techniques to obtain information that may link to, but not support, the investigation of the research question. (AO3) • Critically considers the role of interpretation, analysis based on the data / information collected. (AO3) • Clear evidence of an ability to draw conclusions and the evaluation is full, across a number of stages in the route to enquiry. (AO3) |

| Question Number | Answer | Mark |
|------------------------|---|-------------|
| 4(a) (i) | <p>Explain one problem with the design of the question 'What is your background?'</p> <p style="text-align: center;">A03 (2 marks)</p> <p>Award 1 mark for explaining a problem and a further expansion mark, up to a maximum of 2 marks:</p> <ul style="list-style-type: none"> • Question is vague / "Background" not clear (1) which may lead to unreliable outcomes (1) • Not enough categories (1) so some people may be excluded (1) • Respondents not sure which background they fit into/may feel offended by the question (1) so they may not even answer the question / leave it out (1) • No "other" category (1) which would allow people who don't fit in the categories shown to respond (1) <p>Accept other valid ideas linked to the information on Figure 3a.</p> | 2 |

| Question Number | Answer | Mark |
|------------------------|--|-------------|
| 4(a)(ii) | <p>Explain one advantage of a large sample size in primary data collection.</p> <p style="text-align: center;">A03 (3 marks)</p> <p>Award 1 mark for explaining an advantage of larger sample sizes, and up to 2 further expansion marks. Maximum 3 marks.</p> <ul style="list-style-type: none"> • A larger sample improves the validity of the data (1) because more individuals/view-points are included (1) so the quality of the research is improved (1). • A large sample size allows fuller statistical analysis to be carried out (1) as the average values will be more accurate (1) as outliers/ anomalies will be easier to identify (1). <p>Accept other valid ideas. Do not credit more samples/ more places/ more data as this is the question.</p> | 3 |

| Question Number | Answer | Mark |
|------------------------|--|-------------|
| 4(b)(i) | <p>Calculate the modal class (mode) for height of mangrove trees.</p> <p style="text-align: center;">A03 (1 mark)</p> <p>Award 1 mark for performing the calculation up to a maximum of 1 mark.</p> <ul style="list-style-type: none"> • More than 7m (1) • Accept 16 (the number in the modal class) | 1 |

| Question Number | Calculate the missing value for "very high" human damage to mangroves. Answer | Mark |
|------------------------|--|----------|
| 4(b)(ii) | A03 (1 mark) Award 1 mark for performing the calculation up to a maximum of 1 mark. <ul style="list-style-type: none"> • 9 (1) | 1 |

| Question Number | Suggest one problem the students might have experienced when collecting this primary data. Answer | Mark |
|------------------------|---|----------|
| 4(b)(iii) | A03 (2 marks) Award 1 mark for explaining a problem and a further expansion mark, up to a maximum of 2 marks. <ul style="list-style-type: none"> • Descriptors are confusing (1) so difficult to accurately classify data (1). • There is no guide as to what the descriptors mean (1) leading to unreliable outputs (1). • They could get lost (1) as they are in unfamiliar surroundings (1). • Danger in collecting data on the coast (1) from tide coming in/ risk of being bitten by mosquitoes (1). • Unable to gain access to some sites to collect data (1) so results are unreliable(1). <p>Accept other valid ideas.</p> | 2 |

| Question Number | Explain one way the students could use GIS to present and analyse their results. Answer | Mark |
|------------------------|--|----------|
| 4(c) | A03 (3 marks) Award 1 mark for a way GIS could be used to present and analyse their results and a further two expansion marks up to a maximum of 3 marks. <ul style="list-style-type: none"> • GIS could be used to compare amount of coast line covered by mangroves (1) so showing change over time (1) and therefore work out a increase in m² per year (1). • GIS could be used to identify variations in local population density (1) which could be analysed for different amounts of pressure on the coastline (1) and therefore help to understand the observed levels of damage (1). • GIS could be used to present located fieldwork data (1) e.g. as pie charts of heights of mangroves (1) which would allow analysis by different area (1). <p>Accept other valid ideas.</p> | 3 |

| Question Number | Explain one problem with the design of the question ‘What is your background?’ Answer | Mark |
|------------------------|--|----------|
| 5(a)(i) | <p style="text-align: center;">A03 (2 marks)</p> <p>Award 1 mark for explaining a problem and a further expansion mark, up to a maximum of 2 marks:</p> <ul style="list-style-type: none"> • Question is vague / “Background” not clear (1) which may lead to unreliable outcomes (1) • Not enough categories (1) so some people may be excluded (1) • Respondents not sure which background they fit into/feel offended by the question (1) so they may not even answer the question / leave it out (1) • No “other” category (1) which would allow people who don’t fit in the categories shown to respond (1) <p>Accept other valid ideas linked to the information on Figure 4a.</p> | 2 |

| Question Number | Explain one advantage of a large sample size in primary data collection. Answer | Mark |
|------------------------|---|----------|
| 5(a)(ii) | <p style="text-align: center;">A03 (3 marks)</p> <p>Award 1 mark for explaining an advantage of larger sample sizes, and up to 2 further expansion marks. Maximum 3 marks.</p> <ul style="list-style-type: none"> • A larger sample improves the validity of the data (1) because more individuals/view-points are included (1) so the quality of the research is improved (1). • A large sample size allows fuller statistical analysis to be carried out (1) as the average values will be more accurate (1) as outliers/ anomalies will be easier to identify (1). <p>Accept other valid ideas. Do not credit more samples/ more places/ more data as this is the question.</p> | 3 |

| Question Number | Calculate the modal class (mode) for the number of floors. Answer | Mark |
|------------------------|---|----------|
| 5(b)(i) | <p style="text-align: center;">A03 (1 mark)</p> <p>Award 1 mark for performing the calculation up to a maximum of 1 mark.</p> <ul style="list-style-type: none"> • More than 20 (1) • Allow 16 (the number in the modal class) | 1 |

| Question Number | Calculate the missing value for “very high” building quality. Indicative content | Mark |
|------------------------|--|----------|
| 5(b)(ii) | <p style="text-align: center;">A03 (1 mark)</p> <p>Award 1 mark for performing the calculation up to a maximum of 1 mark.</p> <ul style="list-style-type: none"> • 9 (1) | 1 |

| Question Number | Suggest one problem the students might have experienced when collecting this primary data. Answer | Mark |
|------------------------|--|----------|
| 5(b)(iii) | <p style="text-align: center;">A03 (2 marks)</p> <p>Award 1 mark for explaining a problem and a further expansion mark, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • Descriptors are confusing (1) so difficult to accurately classify data (1). • There is no guide as to what the descriptors mean (1) leading to unreliable outputs (1). • They could get lost (1) as they are in unfamiliar surroundings (1). • Danger in collecting data in the city (1) from traffic/crossing roads (1). • Difficulty in gaining access to some sites to collect data (1) so results are unreliable(1). <p>Accept other valid ideas.</p> | 2 |

| Question Number | Explain one way the students could use GIS to present and analyse their results. Answer | Mark |
|------------------------|--|----------|
| 5(c) | <p style="text-align: center;">A03 (3 marks)</p> <p>Award 1 mark for a way GIS could be used to present and analyse their results and a further two expansion marks up to a maximum of 3 marks.</p> <ul style="list-style-type: none"> • GIS could be used to create layers of urban land-use (1) which could be analysed to see change of numbers of hotels (1) to identify the parts of the city where tourism dominates (1). • GIS could be used to identify variations in rateable values (1) which could be analysed for different areas (1) and therefore help to understand the need for regeneration (1). • GIS could be used to present located fieldwork data (1) e.g. as pie charts of hotel height (1) which would allow analysis by different areas(1). <p>Accept other valid ideas.</p> | 3 |

