

Mark Scheme (Results)

January 2023

Pearson Edexcel International Advanced Level In Geography (WGE02) Unit 2 Geographical Investigations

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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)	AO2 (2 marks)	
	A = arch, rock arch B = stump, stack	(2)

Question Number	Answer	Mark
-	AO1 (2 marks) Award 1 mark for explaining a way and a further expansion mark, up to a maximum of 2 marks each: • Freeze thaw weathering involves water entering cracks in rocks and freezing (1). When the water freezes it expands, fracturing the rocks and creating debris (1). • Minerals in coastal rocks are dissolved by chemicals in sea water (1) which leads to denudation / destruction / loss over time (1) • The repeated action of heating and cooling stresses rocks (1) causing them to 'shed' off layers which are then moved downslope (onion weathering) (1). Credit other valid explanations, e.g. salt weathering Accept: weathering is linked to mass-movement process e.g. where a physical process, such as heavy rainfall causes saturation which in turn causes breakdown / movement of rock / soil.	Mark (2)

Question Number	Indicative content	Mark
1(b)	AO1 (6 marks)/AO2 (2 marks)	
	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.	
	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:	
	 Coastal sediment transport is the interaction of coastal landforms to various interactions of physical processes. Wind generated waves transfer energy from the sea to coastlines Tides and storm surges as well as near shore currents drive sediment transport. Different types of sediment transport include: traction, saltation, suspension and solution. Longshore drift is the net lateral transport of material along the coastline when waves approach the coast at an angle. 	
	 Sediment transport should be viewed as part of a wider model of coastal systems theory / sediment cell concept / holistic systems, with different inputs, throughputs, and outputs. Local factors include geology, fetch, topography management etc which will all play a role with a greater or lesser extent. Different sized particle will arrive by different means e.g. fines from estuaries, bays and lagoons. Other larger-scale factors are likely to be very important in influencing landforms, including climate change and sea level rise 	

 Landforms will vary considerably in time and space so it's difficult to pin-down the general importance of sediment transport in terms of contribution / set of processes. 		general importance
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Level	Mark	Descriptor
Level 0	0	No acceptable response.
Level 1	1-3	 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) 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	 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	Answer	Mark
2(ai)	AO2 (2 marks) Award 1 mark for each idea from the resource. Dust / air from construction Road closures Noise pollution from machinery Noise form railway line in the mid-ground of photograph Noise from neighbours (high density living) Lack of green space / amenity areas Temporary loss of housing	
	Credit other valid ideas.	(2)

Question Number	Answer	Mark
2(aii)	 AO1 (2 marks) Award 1 mark for explaining an approach and a further expansion mark, up to a maximum of 2 marks each: Communities can form a legal action group (1) which means that they can put pressure on local government for housing change (1). NGOs can act a pressure group (1) so they can influence local stakeholders and implement positive change. (1). NGOs can act as fund raisers (1) which means money can be spend on new urban development projects (1). Community groups can get together with specialist skills and qualities (1) so offering their time for free on worthwhile housing projects. (1). 	
	Credit other valid ideas.	(2)

Question Number	Indicative content	M ark
2(b)	AO1 (6 marks)/AO2 (2 marks)	
	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.	
	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:	
	AO1	
	 Regeneration generally means improvement through renewal and is different to reimaging, for instance, which is more about how a place is seen by stakeholders etc 	
	 Regeneration includes social, economic, political as well as environmental improvements but there is much overlap between the ideas so often they cannot be considered as discrete 	
	 Urban regeneration schemes can be developed at a range of scales (small to very large) and have a range of different design briefs. 	
	 Smaller-scale regeneration projects focus on improving communities (housing, education and skills, employment opportunities) and increasing local representation. 	
	 Large-scale infrastructure projects (sporting events, expos, tourism development) are often the catalyst for regeneration, re-imaging and rebranding. 	
	A02	
	 Regeneration is often focused around economic rather than environmental improvements since some schemes are privately funded and shareholders want a return. 	
	 Regeneration may not benefit all individuals and groups within and area, so the sustainability aspect can be met with mixed success, but this will vary by scheme and location. 	

- New businesses locating in an area can benefit, as can their employees; economic regeneration can lead to greater local and national taxes for local / national government.
- There could be some assessment of the extent to which there are environmental or economic benefits for groups of people, within a balanced overall assessment.

Answers may write about one or more schemes which are located.

(8)

Level	Mark	Descriptor
Level 0	0	No acceptable response.
Level 1	1-3	 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) 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	 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	Answer	Mark
Number		
3(a)	AO3 (4 marks)	
	Award 1 mark for identifying a risk and a further expansion mark up to a maximum of 2 marks. Nature of risk, and risk management will vary depending on the location as well as the context of the investigation.	
	 In the urban area there was lots of traffic so the risk was of being struck by a vehicle (1). This was managed by only using a designed crossing (1). Fieldwork was carried out in the winter so there was a small risk of hypothermia (1). Lots of warm clothes were used (1). The wet rocks at the coast presented a slip and trip risk. (1) Walking boots were used to minimise the risk of falling over (1). Risk of poor-quality data collection (1) leading to unreliable conclusions (1). 	
	Credit other valid ideas.	
	Nature of risk, and risk management will vary depending on the location as well as the context of the investigation.	(2)

Answer	Mark
AO3 (4 marks)	
Award 1 mark for explaining the research and a further mark for explaining how it was linked to the investigation, up to a maximum of 2 marks for each data collection approach. Nature of qualitative methods utilised will vary depending on the location as well as the context of the investigation.	
 Interview data from a number of respondents were used (1) to find out about attitudes towards rebranding in the city (1) Questionnaires (open questions) used to gauge opinions from stakeholders (1) such as impacts of change (1). Field sketches were used (1) to give an accurate representation of the landscape to help with later analysis (1). Digital photographs were taken of the fieldwork equipment (1) so that this could be later used to help evaluate the methods and their reliability (1). Field notes recorded aspects of the site location and a description (1). This helped with the analysis and follow-up to link together understanding of geographical processes in the area (1). Allow questionnaires as a semi-qualitative in the context of open responses. 	
Credit other valid ideas.	(4)
	Award 1 mark for explaining the research and a further mark for explaining how it was linked to the investigation, up to a maximum of 2 marks for each data collection approach. Nature of qualitative methods utilised will vary depending on the location as well as the context of the investigation. Interview data from a number of respondents were used (1) to find out about attitudes towards rebranding in the city (1) Questionnaires (open questions) used to gauge opinions from stakeholders (1) such as impacts of change (1). Field sketches were used (1) to give an accurate representation of the landscape to help with later analysis (1). Digital photographs were taken of the fieldwork equipment (1) so that this could be later used to help evaluate the methods and their reliability (1). Field notes recorded aspects of the site location and a description (1). This helped with the analysis and follow-up to link together understanding of geographical processes in the area (1). Allow questionnaires as a semi-qualitative in the context of open responses.

Question Number	Answer	Mark
3(c)	AO3 (6 marks)	
	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.	
	Indicative content guidance Content depends on students' choice of investigation question. Primary data may include the following ideas:	
	 Used to find out more about the population/people of an area, e.g. local census statistics. Assisted in design of sampling framework: number of sites, spacing, sample sizes, sampling method, plus methodology: equipment, operator error etc. Secondary data was used to contextualised and challenge primary fieldwork data. Secondary data can be used to give baseline data, e.g. to work out rates of coastal recession using GIS and historical maps. Secondary data could provide opinions from a range of online and other sources to provide textual context. Secondary information was used to provide quantitative data for statistical analysis, e.g. the calculation of median deprivation indices for contrasting local areas. 	
	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.	(6)

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1-2	 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	 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) 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	 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) 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	Marks
•	AO3 (12 marks) 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. Indicative content guidance Content depends on students' choice of research question. Presentation and analysis should include some the following: • The nature of initial research to inform the context	Marks
	 of the enquiry as well as the identification of an appropriate topic to study through the route to enquiry. Design of sampling framework: number of sites, spacing, sample sizes, sampling method – linked to specific methods of data collection. Methodologies: these will depend on specific methods chosen but can include evaluation of the equipment used, operator error; success of recording sheets / tallies Inaccessibility of sites / lack of ability collect data due to time of day, seasons, or unanticipated hazards such as bad weather. Ethical issues could be considered e.g. appropriateness of questionnaire questions This impacts on both the range and quality of data and in turn has effects upon the accuracy of the results and the validity of conclusions. Appropriate data analysis and whether the data collected could be easily collated and analysed, or was generated in a form that made this stage problematic. Conclusions could be referred to if data collection yielded unusual / unexpected / anomalous results which affected the reliability / validity of conclusions. 	

Note responses should cover both stages 3&4 of the	
prescribed enquiry sequence (Appendix 2).	(12)

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1-4	 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	 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	 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)	AO3 (2 marks)	
	Award 1 mark for an initial reason and a second mark for the development, up to a maximum of 2 marks.	
	 Helps you test a theory (1) therefore can see whether it works in a local environment (1). Allows the data collector to see what might be expected (1) so helps them prepare in terms of equipment, planning etc. (1). Models and theories are usually simplifications of real-world systems (1) therefore you can collect primary data to see how much it is really different (1). 	
	Credit other valid ideas.	(2)

Question Number	Indicative content	Mark
4(b)	AO3 (3 marks) Award 1 mark for explaining a disadvantage and a further expansion mark up to a maximum of 3 marks. Not everyone can access internet (1) leading to problems using the technology (1) so the tool cannot be used in the field (1). Maps can be out of date (1) meaning that the information not always representative (1) so conclusions may be unreliable (1). GIS information may not be available for a particular study area (1) so there are gaps in understanding (1) giving low confidence in conclusions (1). Quality of data may not be checked and validated (1) so don't know how much it can be trusted (1) and therefore raises questions when it comes to reaching conclusions (1). Credit other valid ideas.	(2)
	source.	(3)

Question	Answer	Mark
Number		
4(c)(i)	AO3 (1 mark)	
	4.3	(1)

Question	Answer	Mark
Number		
4(c)(ii)	AO3 (1 mark)	
	0.40	(4)
	942	(1)

Question	Answer	Mark
Number 4(c)(iii)	AO3 (2 marks)	
	 Award 1 mark for a reason and a further expansion mark up to a maximum of 2 marks. The study is not referenced or sourced (1) which means that we know nothing about where it comes from / credibility / quality (1). No indication of the when in the month the data was collected (1) which could impact on the type of beach litter (1). No indication of exactly where it took place (1) and this could introduce bias and is may not be based on a fair sample (1) "Other" types of litter is non-specific (1) therefore can't make conclusions around this part of the data (1) Collected in one place only (1) which may not be representative of the sample area / people (1). 	
	Credit other valid ideas.	(2)

Question	Answer	Mark
Number 4(d)	AO3 (3 marks)	
	Award 1 mark for a reason and a further expansion mark up to a maximum of 3 marks.	
	 Used a camera to take pictures of evidence of urban problems (1) meaning that they had documented the evidence (1) and making the overall investigation more trusted (1). With permissions, taking pictures of people in a coastal / beach environment (1) and then used this "street photography" to paint a picture of what the community is like (1) so that this can be shared with different stakeholders (1). Taking pictures of a recording sheet to be used (1) so you can use this as part of a pilot survey (1) so the recording sheet can be adapted at a later date (1). Taking pictures at different times of the day (1) to see if places change from morning to afternoon (1) so that different conclusions can be reached (1). 	
	Credit other valid ideas.	(3)

Question Number	Answer	Mark
5(a)	 AO3 (2 marks) Award 1 mark for an initial reason and a second mark for the development, up to a maximum of 2 marks. Helps you test a theory (1) therefore can see whether it works in a local environment (1). Allows the data collector to see what might be expected (1) so helps them prepare in terms of equipment, planning etc. (1). Models and theories are usually simplifications of real-world systems (1) therefore you can collect primary data to see how much it is really different (1). 	
	Credit other valid ideas.	(2)

Question Number	Indicative content	Mark
5(b)	AO3 (3 marks) Award 1 mark for explaining a disadvantage and a further expansion mark up to a maximum of 3 marks. Not everyone can access internet (1) leading to problems using the technology (1) so the tool cannot be used in the field (1). Maps can be out of date (1) meaning that the information not always representative (1) so conclusions may be unreliable (1). GIS information may not be available for a particular study area (1) so there are gaps in understanding (1) giving low confidence in conclusions (1). Quality of data may not be checked and validated (1) so don't know how much it can be trusted (1) and therefore raises questions when it comes to reaching conclusions (1). Credit other valid ideas.	
	No credit for simply stating a type of GIS map / data source.	(3)

Question Number	Answer	Mark
5(c)(i)	AO3 (1 mark)	
	4.3	(1)

Question	Answer	Mark
Number		
5(c)(ii)	AO3 (1 mark)	
	942	(1)

Question Number	Answer	Mark
Question Number 5(c)(iii)	AO3 (2 marks) Award 1 mark for a reason and a further expansion mark up to a maximum of 2 marks. • The study is not referenced or sourced (1) which means that we know nothing about where it comes from / credibility / quality (1). • No indication of the when in the month the	Mark
	 data was collected (1) which could impact on the type of litter (1). No indication of exactly where it took places (1) and this could introduce bias and is may not be based on a fair sample (1) "Other" types of litter is non-specific (1) therefore can't make conclusions around this part of the data (1) Collected in one place only (1) which may not be representative of the sample area / people (1). No units on the right-hand Y-axis (land value per hectare) (1) which means that its difficult to make comparisons (1). 	
	Credit other valid ideas.	(2)

Question Number	Answer	Mark
5(d)	AO3 (3 marks) Award 1 mark for a reason and a further expansion mark up to a maximum of 3 marks. • Used a camera to take pictures of evidence of urban problems (1) meaning that they had documented the evidence (1) and making the overall investigation more trusted (1). • With permissions, taking pictures of people in an urban environment (1) and then used this "street photography" to paint a picture of what the community is like (1) so that this can be shared with different stakeholders (1). • Taking pictures of a recording sheet to be used (1) so you can use this as part of a pilot survey (1) so the recording sheet can be adapted at a later date (1). • Taking pictures at different times of the day (1) to see if places change from morning to afternoon (1) so that different conclusions can be reached (1).	
	Credit other valid ideas.	(3)