GradeMax



Mark Scheme (Standardisation)

January 2018

Pearson Edexcel International Advanced Subsidiary Geography (WGE02) Unit 2: Geographical Investigations



GradeMax

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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.

Spelling, Punctuation and Grammar Marking Guidance

- The spelling, punctuation and grammar assessment criteria are common to GCSE English Literature, GCSE History, GCSE Geography and GCSE Religious Studies.

- All candidates, whichever subject they are being assessed on, must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.

- Spelling, punctuation and grammar marking criteria should be applied positively. Candidates must be rewarded for what they have demonstrated rather than penalised for errors.

- Examiners should mark according to the marking criteria. All marks on the marking criteria should be used appropriately.

- All the marks on the marking criteria are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the marking criteria.

- Examiners should be prepared to award zero marks if the candidate's response is not worthy of credit according to the marking criteria.

- When examiners are in doubt regarding the application of the marking criteria 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.

- Handwriting may make it difficult to see if spelling, punctuation and grammar are correct. Examiners must make every effort to assess spelling, punctuation and grammar fairly and if they genuinely cannot make an assessment, the team leader must be consulted.

- Specialist terms do not always require the use of complex terminology but the vocabulary used should appropriate to the subject and the question.

- Work by candidates with an amanuensis, scribe or typed script should be assessed for spelling, punctuation and grammar.

- Examiners are advised to consider the marking criteria in the following way:
  - How well does the response communicate the meaning?
  - What range of specialist terms is used?
  - How accurate is the spelling, punctuation and grammar?

Quality of Written Communication

Questions which involve the writing of continuous prose will expect candidates to:

- show clarity of expression
- construct and present coherent arguments
- demonstrate an effective use of grammar, punctuation and spelling.

Full marks will be awarded if the candidate has demonstrated the above abilities.

Questions where QWC is likely to be particularly important are indicated "QWC" in the mark scheme.

Question Number	Answer	Mark
1(a)(i)	**AO2 (2 marks)** A = Backshore B = Offshore	**(2)**

Question Number	Answer	Mark
1(a)(ii)	**AO1 (2 marks)** Award **1** mark for identifying a physical process and a further **1** expansion mark to explain how that process operates. Attrition bashes / grinds / bumps sediments (or stones) (1) so that they become more rounded in shape (1). Attrition bashes / grinds / bumps sediments (or stones) (1) so that they become smaller in size (1). Attrition when the bed load is eroded by itself and the bed (1) creating smaller and or more rounded stones (1).	**(2)**

Question Number	Indicative content
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: **AO1** • Services include commercial fish harvest, greenhouse gas regulation, biodiversity etc • Over-exploitation, drainage and dredging as well as contamination from artificial fertilisers are examples of local human threats • Other less local threats include climate change, UV exposure, ocean acidification • Coastal ecosystem services are at risk from pollution from land-based run-off and marine dumping.

	AO2 • Local factors are likely to be very important in influencing costal ecosystems, but other factors, e.g. climate change and sea level rise may also be significant on vulnerable coasts • Ecosystems may be influenced by other factors such as coastal engineering which protect landscapes and associated features. • Threats will vary significantly in time and space. Note: strongest responses will link well to ecosystem services rather than general landscape / habitat degradation.	
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(a)(i)	**AO2 (2 marks)** Award **1** mark for each characteristic. Maximum **2** marks. • Varies over the course of a day, lowest at 11.00 (1) • Highest flows are between 7-8.00 and 17.00 (1) • Lowest flows are generally between 10.00 and 14.00 (1) • Peak flow is at 17.00 with over 28,000 vehicles (1). Accept other traffic flow characteristics / data, but evidence must be from resource.	**(2)**

Question Number	Answer	Mark
2(a)(ii)	**AO1 (2 marks)** Award **1** mark for identifying measure within the context of a project / example and a further expansion mark, up to a maximum of **2** marks each. Project: cycle superhighways They separate the bikes from the vehicle traffic (1) making it much safer for cyclists in busy urban areas (1) Project: (Kenya) World Bank road improvement schemes, e.g. Langata Road (Nairobi) Many city roads have been substantially widened (1) which has greatly improved traffic flow rates and reduced congestion on the road (1). Credit other valid ideas. Note: located infrastructure project not required for credit.	**(2)**

<table>
<tr><th>Question Number</th><th colspan="2">Indicative content</th></tr>
<tr><td>2(b)</td><td colspan="2">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
• Many cities are seeking very high urban growth rates, especially in S.E Asia.
• Rural to urban migration is a process that is creating a need to a range of affordable houses in countries which are developing
• Urban housing schemes can be developed at a range of scales (small to very large) and have a range of different design briefs in terms of quality and affordability.
• Informal slum housing and service provision can be improved by residents and community action through the process of consolidation over time. Smaller-scale housing projects focus on improving accommodation for communities.
• NGO and community groups play a role in improving housing and services in slum areas in developing world cities, and providing affordable housing in developed cities.
AO2
• Some private housing is problematic often focused around economic gain, rather than environmental since some schemes are privately funded and shareholders want a return.
• New housing where available, may not benefit all individuals and groups within and area, so the success component can be met with mixed success.
• Rapidly growing may not be problematic / challenging if management and planning are well controlled.
• The challenge of building new houses fast enough to keep up with growing demands from new migrants in developing megacities.</td></tr>
<tr><td>Level</td><td>Mark</td><td>Descriptor</td></tr>
<tr><td>Level 0</td><td>0</td><td>No acceptable response.</td></tr>
<tr><td>Level 1</td><td>1–3</td><td>• 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)</td></tr>
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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
3(a)	**AO3 (3 marks)** Award **1** mark for identifying a theory / concept / idea and a further expansion marks up to a maximum of **3** marks. Nature of idea, theory or concept will vary depending on the location as well as the context of the investigation. • The bid rent analysis model was used (1) which would allowed us to compare different retail functions collected in our primary fieldwork (1) which variations in rateable values for different services (1). • The model of zonation across a sand dunes was used (1) to establish an idea of the expected spatial changes in this ecosystem, (1) and that would then be used to help design the sampling strategy (1) • A model was found from local city authority which showed how cycle flows changed over a 24 hr period at certain locations (1). This allowed us to understand the complex nature of traffic flows in the city (1) and to then	**(3)**

	carry out further research into this topic for investigation (1). Note the aim / question / hypothesis is just to provide a context for the investigation and the subsequent parts that follow.	

Question Number	Answer	Mark
3(b)	**AO3 (3 marks)** Award **1** mark for identifying a valid type of quantitative data and a further expansion mark up to a maximum of **3** marks. Nature of quantitative techniques utilised will vary depending on the location as well as the context of the investigation. • The length of a stones long axis was measured (1) to find out about changes along a beach (1) and to compare to the expected model (1) • The shape of stones long axis was measured (1) to find out about changes across a beach (1) and to compare to the expected model (1) • An adapted environmental quality score (1-6) was used (1) to judge the quality of beach defences (1) and so to allow comparison at different coastal stretches (1) • A land use map was used (1) to record changes in ground floor land use along a city transect (1) which would allow us to build up a picture of spatial differences within the urban envelope (1)	**(3)**

Question number	**Answer**
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 research question. Methodology and design (which overlap) may include the following ideas:

	• 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. 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, information and examples which are supported with depth and detail in terms of factual accuracy and realism. Note: the focus for this particular question means that the **bullets 1 + 2** are most relevant to the desired response.

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. (A03)
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. (A03)
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. (A03)

Question number	Answer
3(d)	**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 could include some the following: • The nature of initial research to inform the context of the enquiry as well as the identification of an appropriate topic to study through the route to enquiry. This helps frame the enquiry and therefore the context of the presentation and analysis. • GIS may form both aspects of presentation and analysis, depending on the nature of the software and its application, e.g. Google Earth (Visualisation) vs ArcGIS Online (analysis). • the efficacy of data presentation aids aspects of interpretation and meaning in the results; poor selection of presentation methods can mislead or skew the message from the data / information. • Appropriate data analysis should be used as a tool(s) to help take meaning from the data, including measures of validity and reliability. This can include quantitative and qualitative techniques. • Analysis can include both qualitative (e.g. coding, photo annotation) as well as more usual statistical measures: modes, means, medians, interquartile ranges etc. Note: the focus for this particular question means that the **bullets 2 + 3** are most relevant to the desired response.

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. (A03)
Level 2	**5–8**	• Some understanding of the relationship between the background information, geographical context and research question (AO3)

Level	Mark	Descriptor
		• 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. (A03)
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. (A03)

Question Number	Answer	Mark
4(a)	**AO3 (3 marks)** Award **1** mark for each idea. Maximum **3** marks. • 3a allows the user to see spatial differences in the geology so help with determining sample location (1) • 3a might allow the sample design to be linked to the geology (1). • 3a allows you to see size and scale – so what is achievable (1). • 3b allows them to see potential access points and sites for sampling (1). • 3b might allow and initial risk assessment to be undertaken (1) • 3b links together the geography of landscape and place and to see the importance of tourism (1).	**(3)**

Question Number	Answer	Mark
4(b)(i)	**AO3 (1 mark)** 38	**(1)**

Question Number	Answer	Mark
4(b)(ii)	**AO3 (1 mark)** **Correct answer:** **C** - Some weathering **Incorrect answers:** Reason as numbers are lower for the other descriptors: **A** – Extremely weathered **C** – Some weathering **D** – Slightly weathered	**(1)**

Question Number	Indicative content	Mark
4(b)(iii)	**AO3 (4 marks)** Award **1** mark for suggesting an improvement and a further expansion mark up to a maximum of **2** marks each. • They could increase the number of categories (across) in terms of descriptors (which) would help improve the reliability of outcome (1) • They could provide an additional description of wetness / evidence of water for example (1) to allow the user to better match to the category (1) • They could use pictures of weathered rock (examples) (1) to give the user a better idea of the correct match within the scale. • They could weight some of the options, e.g. cliff height and weathering (1) as these might be regarded as the most important variables (1) • It is difficult to tell the difference some and slightly for instance (1) so they could re-name the descriptors (1). Credit other valid ideas.	**(4)**

Question Number	Indicative content	Mark
4(c)	**AO3 (4 marks)** Award **1** mark for identifying a use / application of GIS and a further expansion mark up to a maximum of **3** marks.	**(4)**

	• GIS could be used to create layers of coastal land-use (1) which could be analysed to see change over time (1) and therefore work out a rate of coastal recession in m per decade (1). • GIS could be used to identify variations in local geology (1) which could be analysed for different rock strengths (1) and therefore help to understand the variety of coastal landscapes / features (1). • GIS could be used to present located fieldwork data (1) e.g. as pie charts of sediments shapes (1) which would allow analysis by different area (1). Credit other valid ideas.	

Question Number	Answer	Mark
5(a)(i)	**AO3 (3 marks)** Award **1** mark for each idea. Maximum **3** marks. • 4a allows the user to see spatial differences in the places being regenerated so help with determining sample location (1) • 4a allows you to also see geographical boundaries so helps in sample design (1) • 4a can see different types of projects in the key (1). • 4b allows them to see potential access points and sites for sampling (1). • 4b might allow and initial risk assessment to be undertaken (1) • 4b links together the geography of landscape and place and to see the importance of tourism (1)	**(3)**

Question Number	Answer	Mark
5(b)(i)	**AO3 (1 mark)** 38	**(1)**

Question Number	Answer	Mark
5(b)(ii)	**AO3 (1 mark)** **Correct answer:** **C** - Some weathering **Incorrect answers:** Reason as numbers are lower for the other descriptors: **A** – Extremely weathered **C** – Some weathering **D** – Slightly weathered	**(1)**

Question Number	Indicative content	Mark
5(b)(iii)	**AO3 (4 marks)** Award **1** mark for suggesting an improvement and a further expansion mark up to a maximum of **2** marks each. • They could increase the number of categories (across) in terms of descriptors (1) (which) would help improve the reliability of outcome (1) • They could provide an additional description of litter for example (1) to allow the user to better match to the category (1) • They could use pictures of weathered buildings (examples) (1) to give the user a better idea of the correct match within the scale. • They could weight some of the options, e.g. noise and building weathering (1) as these might be regarded as the most important variables (1) • It is difficult to tell the difference some and slightly for instance (1) so they could re-name the descriptors (1). Credit other valid ideas.	**(4)**

Question Number	Indicative content	Mark
5(c)	**AO3 (4 marks)** Award **1** mark for identifying a use / application of GIS and a further expansion mark up to a maximum of **3** marks. • GIS could be used to create layers of urban land-use (1) which could be analysed to see change over time (1) and therefore work	**(4)**

	out a rate of shop-turnover / change in usage over time (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 variety of urban services and land uses (1). • GIS could be used to present located fieldwork data (1) e.g. as pie charts of pedestrian flows (1) which would allow analysis by different areas (1). Credit other valid ideas.	