National
Qualifications
2023

2023 Geography

Advanced Higher

Finalised Marking Instructions

General marking principles for Advanced Higher Geography

Always use these general principles. Use them in conjunction with the detailed marking instructions, which identify the key features required in candidate responses.

(a) Always use positive marking. This means candidates accumulate marks for the demonstration of relevant skills, knowledge and understanding; marks are not deducted for errors or omissions.

(b) If a candidate response does not seem to be covered by either the principles or detailed marking instructions, and you are uncertain how to assess it, you must seek guidance from your team leader.

(c) Use the full range of marks available for each question.

(d) The detailed marking instructions are not an exhaustive list. Award marks for other relevant points.

(e) Award marks only where points relate to the question asked. Where candidates give points of knowledge without specifying the context, award marks unless it is clear that they do not refer to the context of the question.

Marking principles for each question type
There is a range of question types in this question paper. For each question type, the following provides an overview of marking principles.

Explain **questions**
Candidates gain marks for explaining or suggesting reasons for the cause or impact of something, or for referring to causal connections and relationships. Candidates must do more than describe to gain marks here.

For source-based questions, candidates should make use of these and refer to them within their answer for full marks.

Where candidates provide a purely descriptive answer, or one where development is limited, award no more than half the available marks for the question.

Analyse **questions**
Candidates gain marks for identifying parts, the relationship between them, and their relationships with the whole; and for drawing out and relating implications.

Award an analysis mark where candidates use their knowledge and understanding or a source to identify relevant components (for example of an idea, theory, argument) and clearly show at least one of the following:
- links between different components
- links between component(s) and the whole
- links between component(s) and related concepts
- similarities and contradictions
- consistencies and inconsistencies
- different views or interpretations
- possible consequences or implications
- the relative importance of components
- understanding of underlying order or structure.

Where candidates are asked to analyse they should identify parts of a topic or issue and refer to the interrelationships between, or impacts of, various factors. For example, where a question asks candidates to analyse the different impacts of flooding on land use, they should consider the effects of the immediate area and also, where appropriate, other areas. Candidates should support analysis with evidence where relevant.

Evaluate **questions**

Candidates gain marks for making a judgement of the success, failure, or impact of something based on criteria. They should give a brief description of the technique or methodology being evaluated, before offering an evidenced conclusion.

Discuss **or** *comment on* **questions**
Candidates gain marks for exploring ideas about a project, or the impact of a change. They should consider different views on an issue or argument. They should give a range of impacts or ideas within their answer.

Draw to scale **questions**
Candidates gain marks for drawing a shape or route to the correct size using the given scale of the map.

Marking instructions for each question

Question			General marking instructions for this type of question	Max mark	Marking instructions for this question
1.	(a)	(i)	Award **1 mark** for size. Award **2 marks** for site for appropriate site for suitable access and relief with a maximum of **1 mark** if the area chosen is outwith the grid of the tracing overlay.	3	The size should be 1.2 cm x 0.6 cm. **(1)** The site for example 258052. A suitable site would include good accessibility in the area adjacent to the A1068 **(1)** and suitable relief (flat land). **(1)**
		(ii)	Good use of map reading skills and should not consist of simple lists. Award **1 mark** for each valid point. Award **0 marks** for a reverse point. Award a **maximum of 5 marks** for advantages or disadvantages.	8	**Advantages:** • good access — A1068 provides easy access directly to Amble and Warkworth and the surrounding villages **(1),** and local roads connect to villages such as Shillbottle Grange 207085 **(1)** • the retail park is in between the two main settlements so it is likely to be on a bus route **(1)** This would also provide transport opportunities for a potential workforce from the local area **(1)** • the main settlements in the area are Amble and Warkworth. The location is equidistant from these so maximising potential customers **(1)** • the land is a green field site so there are no buildings that would require to be demolished **(1)** • the retail park is quite small. The land is flat reducing construction costs **(1)** and there is plenty of space around the park so that it could expand in the future if it is successful **(1)** • there is no housing directly beside the site so there are no residents to disrupt with increased traffic. **(1)** **Any other valid point.** **Disadvantages:** • being in between Amble and Warkworth makes the location not ideal for either place **(1)** • there is a railway line 3 km to the west but there is no station to encourage shoppers to visit **(1)**

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Question			General marking instructions for this type of question	Max mark	Marking instructions for this question
					- the greenfield site will need services like water and electricity to be installed **(1)** increasing the costs of construction **(1)** - land is close to the River Coquet which is tidal at this point. **(1)** This could result in flooding **(1)** however the A1068 is closer to the river than the retail park suggesting this might be a low risk **(1)** - the site may be too far from local towns and villages meaning residents without a car will find it harder to access. **(1)** **Any other valid point.**
		(iii)	Award **1 mark** for each valid **social** or **economic** impact. Award **0 marks** for a reverse point. Award **0 marks** for environmental impacts. Award **0 marks** for repeat points from previous parts of the question.	4	- it could stimulate economic development (multiplier effect) of this area **(1)** and increase job opportunities for potential employees from Amble and Warkworth **(1)** - the area has between 7.5% and 10% unemployment. (from the atlas) **(1)** - many jobs may be part time and so not improve the standard of living **(1)** - other jobs may require workers to learn new skills **(1)** - the local shops in Amble and Warkworth may lose trade to the retail park. **(1)** This would affect the food and clothes shops more as supermarket prices will be cheaper **(1)** - other shops like the chemists and charity shops are less likely to be affected **(1)** - diagram 1 shows shops that are empty and 'to let' so this area would not want to lose any more shops **(1)** - people who have been unemployed may feel more positive about their future. **(1)** **Any other valid point.**

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Question			General marking instructions for this type of question	Max mark	Marking instructions for this question
	(b)		This question should allow candidates to make good use of the map extract. Award **1 mark** for each valid point. There is no requirement to mention both physical and human factors but a good answer is likely to include both. Candidates should use map evidence and their atlas to support their answer.	**5**	**Reasons for tourism:** • the area is accessible from Scotland and England by rail and by the A1 **(1)** • the climate of the area has temperatures of 14 degrees in the summer and less than 1000mm of rainfall per year make it attractive to visitors **(1)** • the beaches provide opportunities for dog walking and family days out. **(1)** The mean high-water mark 283037 means that areas of sand are available even when the tide is in **(1)** • boat trips are available from the harbour 268049 **(1)** and may go to Coquet Island where there is a Nature Reserve **(1)** giving people the opportunity to do some bird watching **(1)** • there is a Marina 264049 where people may hire boats **(1)** • there is a castle in Warkworth 247056 owned by English Heritage **(1)** and the site of a medieval village 227074 **(1)** for people who have an interest in the past **(1)** • the Northumberland Coast Path/St Oswald's Way 250086 are ideal for longer walks **(1)** • there are several car parks for visitors 219079, picnic sites 255065 and places to stay like the caravan site 253079 **(1)** • if people are feeling more energetic, they could play golf at Warkworth Golf Club 254071 **(1)** • diagram 2 shows beautiful scenery in which people can sit and sunbathe or just watch the world go by. **(1)** **Any other valid point.**

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Question			General marking instructions for this type of question	Max mark	Marking instructions for this question
2.	(a)	(i)	Up to **2 marks** can be awarded for discussing factors that could be taken into consideration. Full marks can be given for just describing the technique without assessing other factors.	**5**	- the aspect of the slope could be determined using an OS map/compass **(1)** - measure the distance along the ground of the section and record the distance to ensure consistent 'sections', for example, every 10 metres **(1)** - students may also note the changes in slope angle up the slope, and use them to form 'sections' for the slope profile **(1)** - one person should stand at the start and one at the finish of each section **(1)** - ranging poles of equal height should be placed at the start and at the end of each section **(1)** - for each 'section' use a clinometer to take a bearing to record the slope angle **(1)** - it is important to ensure the bearing is taken from a point in the ranging pole that coincides with eye level or the stripes of the ranging poles **(1)** - to record accurately the ranging poles must be kept straight **(1)** - repeat the process for each break in the slope that has been identified, or for each 10-metre section **(1)** **Or any other valid point.**
		(ii)	Award **1 mark** for each valid point. Candidates can gain full marks for only mentioning systematic sampling. Candidates can mention both positive and negative points. Up to **2 marks** can be given if other sampling methods are mentioned to show why they may not be suitable.	**5**	- data is taken at regular intervals in an evenly spatial context **(1)** - it is a more straightforward sampling method that using a random sampling technique **(1)** - it ensures a good coverage of the slope compared to other sampling techniques (random) **(1)** - systematic sampling is done at uniform intervals, for example, every 10-metres meaning that sample sites are clearly separated **(1)** - it may mean that the results are biased as not all the areas on the slope have an equal chance of being selected **(1)** - on a slope with varying angles, it is possible that specific things, for example, plants could be overlooked due to their position **(1)** - regular/systematic sampling may lead to important features being missed out, leading to an over or under representation of a particular pattern **(1)** - random sampling is entirely random so it could miss out on large sections of the study area meaning systematic sampling allows for a better representation of data **(1)**

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Question			General marking instructions for this type of question	Max mark	Marking instructions for this question
					• it is hard to identify proportions of soil depth, or average height of plant species on the slope so stratified sampling may be unsuitable **(1)** • it may be hard to stratify soil depth, moisture and plant height if the data is not available. **(1)** **Or any other valid point.**

Question			General marking instructions for this type of question	Max mark	Marking instructions for this question
	(b)	(i)	There must be mention of no **correlation or relationship** between the two variables.	1	There is no relationship between angle of the slope and the average height of plants. **(1)**
		(ii)	Award **1 mark** for each valid point. Both the scatter graph and the PPMCC result must be mentioned for full marks Award **0 marks** for reverse points regarding accepting or rejecting null hypothesis Award **a maximum of 3 marks** where candidates refer only to scatter graph or PPMCC.	4	• the PPMCC result of –0.63 indicates a negative correlation **(1)** • at 95% the value of -0.63 is greater than the critical value of 0.514 **(1)** • the null hypothesis must be rejected at 95% but accepted at 99% **(1)** • the null hypothesis must be accepted at 99% because the value of -0.63 is lower than the critical value of 0.641 **(1)** • the result is significant but the correlation is not perfect and would require further investigation **(1)** • there is a 95% certainty that the result will not have occurred by chance **(1)** • the scatter graph shows a negative correlation in the trend as angle of slope increases the average height of plants decreases **(1)** • there is clustering around 10 degrees to 20 degrees of slope, and 5cm to 15cm of average plant height. **(1)** **Or any other valid point.**

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Question			General marking instructions for this type of question	Max mark	Marking instructions for this question
		(iii)	Award **1 mark** for each valid point, whether positive or negative. Award **0 marks** for reverse points.	4	• PPMCC is a much more sophisticated and powerful statistic than Spearman's Rank meaning it's more reliable and precise **(1)** • it is a powerful technique as it uses the actual figures in Diagram 1 rather than ranking so it is able to recognise differences SRCC would ignore **(1)** • the angle of slope and average height of plant data is interval data so PPMCC is well suited to test this relationship **(1)** • PPMCC is suitable to use as it is used to show a relationship/correlation between two variables such as angle of slope and average height of plant **(1)** • however, it is unduly affected by extreme values **(1)** • PPMCC assumes a linear relationship as suggested by the scattergraph **(1)** • more complicated calculations are needed meaning mistakes can be made, as well as taking longer. **(1)** **Or any other valid point.**

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Question			General marking instructions for this type of question	Max mark	Marking instructions for this question
	(c)		Candidates should refer to both soil **and** vegetation data. Award **1 mark** for each valid point. Award **a maximum of 5 marks** where candidates refer only to soil, or vegetation. Award **0 marks** for describing changes.	7	**From the table:** • pH gradually becomes more acidic from 80m to 140m and this could be linked to the type of vegetation that can grow as there is a decrease in average height **(1)** • lower temperatures at altitude will result in less overall vegetation, with species like moss that can survive in more acidic soils **(1)** • at lower altitudes between 0m and 50m, decomposing grass and moss will create a less acidic soil **(1)** • poor soil fertility and highly acidic soils may limit vegetation altogether with larger areas of bare ground as seen in Diagram 4 **(1)** • there could also be greater levels of soil erosion where slope angle is highest between 100m to 140m along the slope resulting in more bare ground **(1)** • soil moisture decreases significantly between 80m and 140m. This can be linked to the free drainage of water down steeper slope angles **(1)** • this will lead to water gathering at the bottom of a slope and greater soil moisture there **(1)** • soil erosion and leaching could lead to greater soil depth further down the slope at 0-60 metres along the slope which means a larger % of grasses and moss **(1)** • from 100m to 140m the soil depth gradually declines meaning there is a reduction in levels of moisture and nutrients for plants therefore reducing their overall numbers **(1)** • slope angle is highest between 120-140 metres along the slope suggesting that greater leaching of minerals and nutrients occurs here **(1)** • this leaching of minerals and nutrients makes it difficult for plants like moss and grasses to grow **(1)** • there is a relationship between plant height and slope angle, with smallest average plant height of 1cm occurring when slope angle is largest (40 degrees) **(1)** • exposure to wind can also be a factor which could limit the height of plants as taller plants find it difficult to grow when they are more exposed. **(1)** **Or any other valid point.**

Question			General marking instructions for this type of question	Max mark	Marking instructions for this question
	(d)		Candidates can be credited for both positive and negative aspects of using kite diagrams. Award **1 mark** for each valid point.	**4**	• kite diagrams are a useful technique for showing changes in vegetation over distance **(1)** • they are commonly used to show changes in the % cover of plant species along an environmental gradient so are well suited to this data **(1)** • kite diagrams clearly show the density and distribution of vegetation along a transect **(1)** • On graph paper kite diagrams can be quite easy to construct because it's a mirrored line graph **(1)**; it is visually clear and easy to distinguish one category from another **(1)** • it is easy to compare the vegetation coverage between the vegetation types **(1)** meaning potential relationships between different vegetation types and slope angle can be more easily identified **(1)** • however, it is visually subjective as the scale can influence the visual effect, for example, it can overstate reality by having data on both sides of the x axis **(1)** • it is time consuming to construct by hand **(1)** • kite diagrams only works with a specific range of data such as vegetation and would not be appropriate for other data seen in Diagram 1. **(1)** **Or any other valid point.**

[END OF MARKING INSTRUCTIONS]

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