

Geography

Advanced GCE

Unit **F764**: Geographical Skills

Mark Scheme for January 2012

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All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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Annotations used in the detailed Mark Scheme

Annotation	Meaning
	Correct point (only to be used in the Standardisation sample).
	Omission mark. Further development needed, missing point or link between points.
	Level one.
	Level two.
	Level three.
	Unclear, inaccurate, dubious validity.
	Irrelevant, a significant amount of material that does not answer the question.
	No example(s) used or provided.
	Rubric Error (place at start of Question not being counted).
	Highlighting an issue eg irrelevant paragraph. Use in conjunction with another stamp eg  or 
	Point has been seen and noted.

All answers should have annotation UNLESS they are full marks. If no appropriate annotation use 

Question		Answer	Marks	Guidance	
				Content	Levels of response
1	(a)	Candidates should recognise speculative nature of title and the inappropriate scale of the proposed investigation. Some may suggest 'To investigate' is indeterminate. Also credit those that comment on the geographical validity of this title. Higher level responses may look at the make up of the title almost word by word eg 'outskirts' is too vague. Reference to the ability to collect relevant data may be considered.	5		<p>Level 2: [4-5 marks] Candidates suggest two detailed points or one detailed and one less detailed. Explanation of why these are limitations should be clear at this level. Clear reference made to title.</p> <p>Level 1: [0-3 marks] Candidates suggest two limited or one detailed point. Limited explanation of why these are limitations. Limited, if any, reference made to title.</p>
	(b)	<p>Some may look at SMART (Specific, Measurable, Achievable, Realistic, Timed) but most will probably consider factors such as scale, nature of the area, level of risk, resources available, time available, clear geographical concept, interest. Another approach is the nature and availability of primary/secondary data.</p> <p>Explanation should focus on why or how the factor influences the choice of an investigation.</p> <p>'Factors' may trigger physical, economic, social approach – this is a valid approach.</p>	10	<p>Credit effective use of exemplification – this may suggest the top end of a level.</p> <p>It is the depth of explanation and the linkage to choosing an investigation that should distinguish L3.</p> <p>Simple description or listing of factors is unlikely to get beyond L1.</p>	<p>Level 3: [8-10 marks] Candidates offer a detailed description and explanation, covering a range of factors (at least two), with clear cause/effect between factor and choice of investigation.</p> <p>Level 2: [5-7 marks] Candidates offer an unbalanced description/explanation – probably the latter less detailed, covering at least two factors, with some cause/effect between factor and choice of investigation.</p> <p>Level 1: [0-4 marks] Candidates offer a largely descriptive answer covering few of the factors, poorly linked to explaining how they impact on choice of investigation.</p> <p>If either description or explanation clearly missing then max Level 1.</p>

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	(c)	<p>GIS has a number of potential data collection roles in geographical investigations:</p> <ul style="list-style-type: none"> • collecting data in the field eg data logging to an exact co-ordinate • accessing secondary data eg census returns, remote sensing images, weather forecast • by storing data linked to an exact location • limits human error • Annotation to one or more maps • Using GIS to check for Health and Safety in collecting data • The use of GIS in the data capture to better enable subsequent data presentation and analysis is valid <p>Evaluation could involve negative aspects such as cost, lack of technical skill, software failures.</p>	5	<p>Higher level responses may focus on the spatial element of GIS. Some exemplification can be expected at this level.</p> <p>Level 1 answers could be largely descriptive of the use of GIS in data collection.</p> <p>The focus is on data collection so do not credit the use of GIS in planning and/or presentation unless explicitly linked to data collection.</p> <p>Data collection may refer to primary and/or secondary data.</p>	<p>Level 2: [4-5 marks] Candidates give a clear and detailed evaluation of the usefulness of GIS in data collection in an investigation.</p> <p>Level 1: [0-3 marks] Candidates give a limited, if any, evaluation of GIS and limited relevance to collecting data.</p>

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2	(a)	(i)	<p>It is a choropleth map showing the percentage of conifers in sections of the wood.</p> <p>Comments may include:</p> <ul style="list-style-type: none"> • visual impact – shading range • it hides internal variations • value interval used • scale issues • boundary aspects • unhelpful title <p>Comments can be negative or/and positive e.g. simple/clear, has a title/key.</p>	5		<p>Level 2: [4-5 marks] Candidates offer detailed comments on of the relative effectiveness of the method of presenting the data. Clear reference made to Fig. 2.</p> <p>Level 1: [0-3 marks] Candidates give few and/or basic comments on the effectiveness with little, if any, linkage to the map.</p>
		(ii)	<p>This is looking at ways such spatial data could be shown:</p> <ul style="list-style-type: none"> • proportional circles or squares • proportional symbols • located charts such as bar and pie charts • isopleths • other versions of choropleth – colour • using GIS to show presentation method • other – but they would need to be backed up with clear relevance for such located % data <p>Evaluation may consider both positive eg visual impact and negative eg difficulty of locating the symbol.</p>	10	<p>One way described and evaluated well could get to L2.</p> <p>Purely a description of a presentation method is a L1 response. Credit attempts to show drawings of techniques – it counts as description.</p>	<p>Level 3: [8-10 marks] Candidates clearly describe and evaluate in detail two alternative ways. There is clear linkage to showing such data on a map.</p> <p>Level 2: [5-7 marks] Candidates should describe and offer some evaluation of two alternative ways – although they are likely to be unbalanced at this level. There should be some linkage to showing such data on a map.</p> <p>Level 1: [0-4 marks] Much may be descriptive with little, if any, evaluation with little, if any, linkage to showing such data on a map.</p>

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	(b)	<p>Any number of statistical methods are possible (the nature of the variables must be spatial):</p> <ul style="list-style-type: none"> • Chi squared • Spearman's rank • Central tendency e.g. mean, mode, standard deviation, range etc • Mann Whitney • Accept other methods not spelled out in the specification e.g. Nearest neighbour, Lorenz curve <p>The justification should focus on how that method can indicate a spatial pattern.</p>	5	<p>There is no expectation that they will include formulae or worked examples.</p> <p>Techniques should be statistical (and analytical) do not credit representational.</p>	<p>Level 2: [4-5 marks] Candidates suggest an appropriate technique and justify how it could be used to analyse a spatial pattern(s).</p> <p>Level 1: [0-3 marks] Candidates give a limited or superficial technique with little, if any, linkage to the way it could be used to analyse spatial patterns. Justification is vague or non-existent.</p>
3	(a)	<p>This is about their comparative effectiveness. Points could cover aspects of:</p> <ul style="list-style-type: none"> • Time taken or time of day/year • Use of colour • Reality (e.g. steepness of slope) • Scale (e.g. people) • Level of annotation • Content and level of detail shown e.g. vegetation types, exact angles of slope, beach make up • Sketch more focused and selective within the investigation e.g. rock structure. 	5	<p>Clear comparison of the effectiveness is key to reaching L2.</p> <p>No clear reference to Fig. 3 – max L1.</p>	<p>Level 2: [4-5 marks] Candidates compare in detail the two methods in terms of their effectiveness at describing the characteristics of the area. Clear reference is made to Fig. 3.</p> <p>Level 1: [0-3 marks] Candidates may describe each method with little, if any, comparison of their effectiveness. Limited reference to Fig. 3.</p>

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	(b)	<p>There is a wide range of sources of primary data but stress is on its advantages over secondary such as:</p> <ul style="list-style-type: none"> • Real and current • Relevant to that particular investigation • How it was collected is known • How it was recorded and grouped is known • It's owned by the investigator <p>Primary data can be seen as broader than the traditional definition – essentially it is unprocessed data (not just that collected in the field first hand) so it could include unprocessed census data etc</p> <p>The contrast with secondary data may be implied or explicit.</p>	10	<p>Purely descriptive answers that focus on the nature of primary data – max Level 1 mark.</p> <p>Purely definitions of the types of data are unlikely to get out of L1.</p>	<p>Level 3: [8-10 marks] Candidates clearly explain in detail the advantages of using primary rather than secondary data in an investigation. Clear link to an investigation(s).</p> <p>Level 2: [5-7 marks] Candidates explain some of the advantages of using primary data in an investigation. The link to an investigation may be present.</p> <p>Level 1: [0-4 marks] Candidates offer little, if any, explanation of the use of primary data. Answers are largely descriptive of primary data.</p>

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	(c)	<p>'Map' covers a wide range of types eg OS map, GIS maps, Goad, sketch map etc. Clearly some of the advantages quoted below are less valid for some types eg sketch maps but these may have their own advantages eg immediacy.</p> <p>It is the justification that is the main discriminator. This could cover:</p> <ul style="list-style-type: none"> • Accuracy and detail – scale, distance, directions • Gives exact locations eg grid ref. • Gives precise measurements • Indication of place names • Can see what lies behind hills etc • Aspects of date of origin or historical aspects • Ability to personalise <p>Or candidates may see the justification as largely the shortcomings of alternatives eg photo.</p> <p>Or it is justified in terms of the use in planning eg health and safety, access for that location.</p>	5	<p>If no reference to showing location then Level 1. A pure description of a map is a L1 response.</p> <p>Location can be seen in the sense of site and/or situation.</p>	<p>Level 2: [4-5 marks] Candidates give clear justification of the use of a map well related to the showing of the location of an investigation.</p> <p>Level 1: [0-3 marks] Candidates offer little, if any, justification for the use of a map to show the location of an investigation.</p>

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4		<p>This is an evaluation of Stage 3 in an investigation.</p> <p>Data collection may include:</p> <ul style="list-style-type: none"> • How primary data collected eg use of equipment • Sampling strategies – size & type • Methods used to ensure reliability and accuracy • Collecting secondary data – sources, its date and reliability • Use of GIS • Conditions under which data is collected in the field <p>Recording of data may include:</p> <ul style="list-style-type: none"> • Nature of tally sheet • Use of ICT and/or GIS • Taking of photographs • Constructing of field sketches/maps • Prepared recording sheets, questionnaire • Conditions under which data is recorded in the field <p>There is a requirement to evaluate both data collection methods and data recording.</p>	20	<p>Clear evaluation of both collection and recording.</p> <p>Some evaluation of collection and/or recording.</p> <p>No evaluation.</p> <p>Those that simply describe their investigations remain in L1.</p>	<p>Level 3: [16-20 marks] Candidates evaluate in detail the methods used for the collection and recording of data in their named investigation. Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology.</p> <p>Level 2: [10-15 marks] Candidates evaluate the methods used for the collection and/or recording of data in their investigation. Reference to recording may be limited or absent. Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology.</p> <p>Level 1: [0-9 marks] Candidates offer largely description with little, if any, evaluation of their methods. Little linkage to their investigation. Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology.</p> <p>If no titled investigation stated then max Level 1.</p>

Question		Answer	Marks	Guidance	
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5		<p>This requires an evaluation of the availability of the resources used in an investigation but can be seen as an evaluation of success – Stage 6.</p> <p>Resources may include:</p> <ul style="list-style-type: none"> • Time • Money • Equipment (type, number, reliability) • Group size • Availability of transport • ICT, GIS etc • A specialist • Data eg secondary • Analytical resources <p>This could be answered by evaluating the impact of resources on each stage of the investigation eg planning, risk assessment, designing data collection etc</p> <p>Or</p> <p>By evaluating the impact of each of a range of types of resource</p> <p>Or</p> <p>By evaluating against the accuracy and reliability of the data collected as a result of the resources available and the ability to produce sensible conclusions.</p>	20	<p>Evaluation of how the availability of resources influenced the success of the investigation as a whole.</p> <p>Evaluation of the contribution of individual resources.</p> <p>A list of equipment failures is a max of L2.</p> <p>Simple description of the resources used should not get beyond L1.</p> <p>Those that simply describe their investigations remain in L1.</p> <p>Credit answers that suggest 'other' factors may explain the success.</p> <p>No credit for speculation about potential improvements.</p>	<p>Level 3: [16-20 marks] Candidates evaluate in detail the extent to which the availability of resources influenced the success (or otherwise) of their named investigation. Cause and effect clearly explained. Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology.</p> <p>Level 2: [10-15 marks] Candidates evaluate the extent to which the availability of resources influenced the success (or otherwise) of their named investigation. Some cause and effect attempted. Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology.</p> <p>Level 1: [0-9 marks] Candidates offer limited, if any, evaluation of the extent to which the availability of resources advanced (or not) their named investigation. No real cause and effect and much is descriptive. Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology.</p> <p>If no titled investigation stated then max Level 1.</p>

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			Evaluation is the key with some attempt at identifying the strengths and weaknesses of the resources. They should be evaluated against something – their ability to progress the investigation.			

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