

GCE AS
Geography
January 2008

Mark Schemes

Issued: April 2008

**NORTHERN IRELAND GENERAL CERTIFICATE OF SECONDARY EDUCATION (GCSE)
AND NORTHERN IRELAND GENERAL CERTIFICATE OF EDUCATION (GCE)**

MARK SCHEMES (2008)

Foreword

Introduction

Mark Schemes are published to assist teachers and students in their preparation for examinations. Through the mark schemes teachers and students will be able to see what examiners are looking for in response to questions and exactly where the marks have been awarded. The publishing of the mark schemes may help to show that examiners are not concerned about finding out what a student does not know but rather with rewarding students for what they do know.

The Purpose of Mark Schemes

Examination papers are set and revised by teams of examiners and revisers appointed by the Council. The teams of examiners and revisers include experienced teachers who are familiar with the level and standards expected of 16- and 18-year-old students in schools and colleges. The job of the examiners is to set the questions and the mark schemes; and the job of the revisers is to review the questions and mark schemes commenting on a large range of issues about which they must be satisfied before the question papers and mark schemes are finalised.

The questions and the mark schemes are developed in association with each other so that the issues of differentiation and positive achievement can be addressed right from the start. Mark schemes therefore are regarded as a part of an integral process which begins with the setting of questions and ends with the marking of the examination.

The main purpose of the mark scheme is to provide a uniform basis for the marking process so that all the markers are following exactly the same instructions and making the same judgements in so far as this is possible. Before marking begins a standardising meeting is held where all the markers are briefed using the mark scheme and samples of the students' work in the form of scripts. Consideration is also given at this stage to any comments on the operational papers received from teachers and their organisations. During this meeting, and up to and including the end of the marking, there is provision for amendments to be made to the mark scheme. What is published represents this final form of the mark scheme.

It is important to recognise that in some cases there may well be other correct responses which are equally acceptable to those published: the mark scheme can only cover those responses which emerged in the examination. There may also be instances where certain judgements may have to be left to the experience of the examiner, for example, where there is no absolute correct response – all teachers will be familiar with making such judgements.

The Council hopes that the mark schemes will be viewed and used in a constructive way as a further support to the teaching and learning processes.

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Rewarding Learning

**ADVANCED SUBSIDIARY (AS)
General Certificate of Education
January 2008**

Geography

Assessment Unit AS 1

assessing

Module 1: Themes in Physical Geography

[ASG11]

TUESDAY 17 JANUARY, AFTERNOON

**MARK
SCHEME**

Introductory Remarks

Note that the assessment objectives (AOs) for this specification are more extensive than those for the previous syllabus. There are now four AOs, and the style of questions and the requirements of the mark scheme have had to be modified somewhat to take account of them, particularly AO2 and AO3 with their need for “critical understanding”. It is worth reproducing the AOs here:

- AO1 Show knowledge of the specified content;
- AO2 Show critical understanding of the specified content;
- AO3 Apply knowledge and critical understanding to unfamiliar contexts;
- AO4 Select and use a variety of skills and techniques, including communicative skills, appropriate to geographical studies.

General Instructions for Markers

The main purpose of the mark scheme is to provide a uniform basis for the marking process so that all markers are following exactly the same instructions and making the same judgements so far as this is possible. Markers must apply the mark scheme in a consistent manner and to the standard agreed at the standardising meeting.

It is important to recognise that in some cases there may be other correct responses that are equally acceptable to those included in this mark scheme. There may be instances where certain judgements have to be left to the experience of the examiner, for example, where there is no absolute, correct answer.

Markers are advised that there is no correlation between length and quality of response. Candidates may provide a very concise answer that fully addresses the requirements of the question and is therefore worthy of full or almost full marks. Alternatively, a candidate may provide a very long answer which also addresses the requirements of the question and is equally worthy of full or almost full marks. It is important, therefore, not to be influenced by the length of the candidate’s response but rather by the extent to which the requirements of the mark scheme have been met.

Some candidates may present answers in writing that is difficult to read. Markers should take the time to establish what points are being expressed before deciding on a mark allocation. However, candidates should present answers which are legible and markers should not spend a disproportionate amount of time trying to decipher writing that is illegible.

Levels of Response

For questions with an allocation of six or more marks three levels of response will be provided to help guide the marking process. General descriptions of the criteria governing levels of response mark schemes are set out on the next page. When deciding about the level of a response, a “best fit” approach should be taken. It will not be necessary for a response to meet the requirements of all the criteria within any given level for that level to be awarded. For example, a Level 3 response does not require all of the possible knowledge and understanding which might be realistically expected from an AS or AL candidate to be present in the answer.

Having decided what the level is, it is then important that a mark from within the range for that level, which accurately reflects the value of the candidate’s answer, is awarded.

Knowledge and Understanding	Skills	Quality of Written Communication	Level
<p>The candidate will show a wide-ranging and accurate knowledge and a clear understanding of the concepts/ideas relevant to the question. All or most of the knowledge and understanding that can be expected is given.</p>	<p>The candidate will display a high level of ability through insightful analysis and interpretation of the resource material with little or no gaps, errors or misapprehensions. All that is significant is extracted from the resource material.</p>	<p>The candidate will express complex subject matter using an appropriate form and style of writing. Material included in the answers will be relevant and clearly organised. It will involve the use of specialist vocabulary and be written legibly and with few, if any, errors in spelling, grammar and punctuation.</p>	3
<p>The candidate will display an adequate to good knowledge and understanding of many of the relevant concepts/ideas. Much of the body of knowledge that can be reasonably expected is given.</p>	<p>The candidate will display evidence of the ability to analyse and interpret the resource material but gaps, errors and/or misapprehensions may be in evidence.</p>	<p>The candidate will express ideas using an appropriate form and style of writing. Material included will be relevant and organised but arguments may stray from the main point. Some specialist terms will be used and there may be occasional errors in spelling, grammar and punctuation. Legibility is satisfactory.</p>	2
<p>The candidate will display some accurate knowledge and understanding but alongside errors and significant gaps. The relevance of the information to the question may be tenuous.</p>	<p>The candidate will be able to show only limited ability to analyse and interpret the resource material and gaps, errors and/or misapprehensions will be clearly evidenced.</p>	<p>The candidate will have a form and style of writing which is not fluent. Only relatively simple ideas can be dealt with competently. Material included may have dubious relevance. There will be noticeable errors in spelling, grammar and punctuation. Writing may be illegible in places.</p>	1

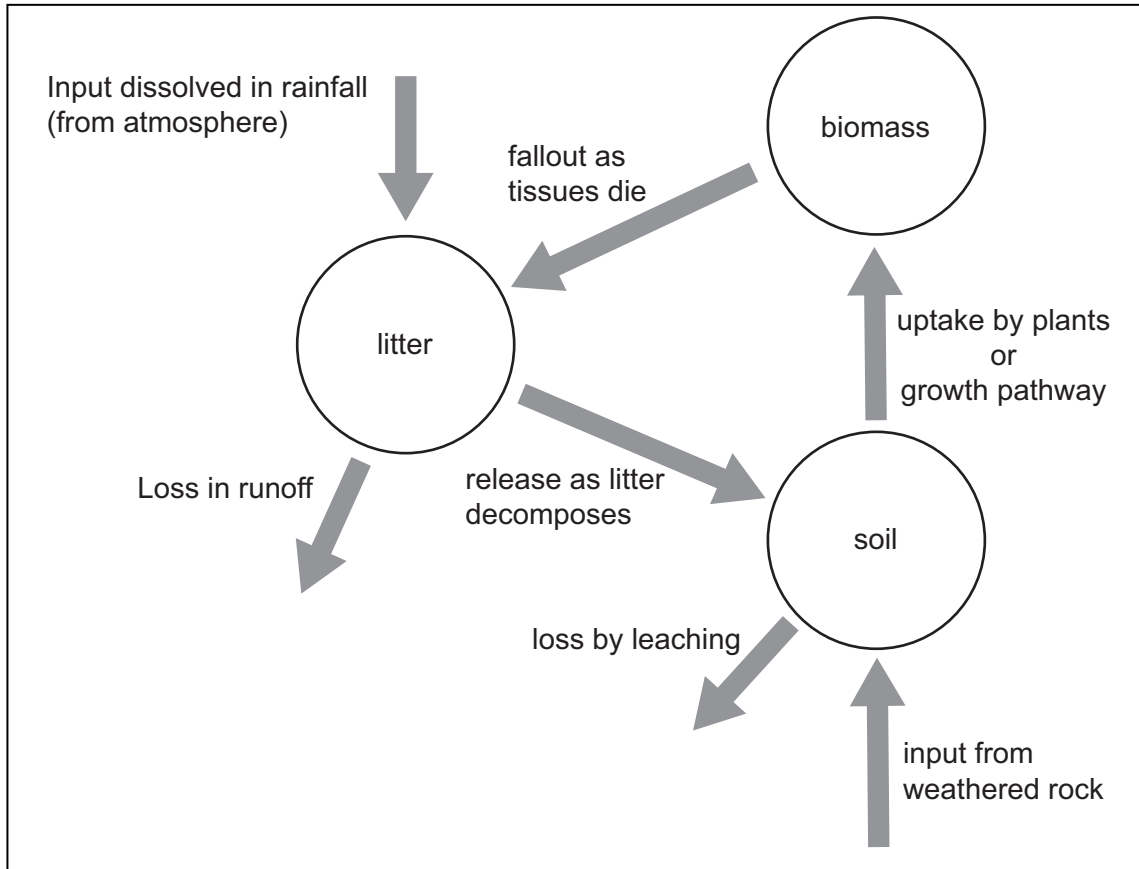
Section A

AVAILABLE
MARKS

- 1 (a) (i) The river feature is a meander.
Accept meander bend or meandering [1]
- (ii) The cross-section is at point 2. [1]
- (iii) Erosion is taking place on the outside of the bend (steep slope x) and deposition on the inside of the bend (gentle slope y). Annotation must be on Resource 1B. [2]
- (b) (i) Attrition is the process of erosion by which pieces of the river's bedload collide with each other and with the riverbed. These impacts break the rock into smaller pieces and also contribute to the bedload becoming more rounded. Impacts [1] and erosion/effects of erosion [1]. [2]
- Saltation is the process of transportation by which pebbles, sand and gravel (bedload) are temporarily lifted by the river current and bounced along the bed in a hopping motion. [2]
- (ii) Deposition occurs when the velocity of a river begins to fall, it has less energy and so no longer has the competence or capacity to carry all its load. As water bursts over the banks of the river during a flood, the increase in frictional drag, caused by the shallow depth of water and vegetation, reduces the speed of flow of the river dramatically. The heaviest parts of the load are deposited first and stay nearest the bank, eventually building up alongside the river channel as mounds of gravel and sands. [4]
- 2 (a) The biotic components are the living material in the ecosystem, such as plants and animals. The abiotic components are inorganic material such as sunlight, minerals in the soil, air etc. Award [2] for distinguishing between the two and [1] for both examples being correct. ([2] + [1]) [3]
- (b) Solar radiation is **captured by green plants** (autotrophs) by the process of photosynthesis. This is the first stage (trophic level). At the next stage are the herbivores (primary consumers), followed by the carnivores (primary and secondary). The resource shows an ecosystem with four trophic levels. Each trophic level feeds on and obtains energy from the preceding level and provides energy for the next trophic level. Candidates should make use of the resource to describe how energy moves through an ecosystem.
- The transfer of energy is only **10%** efficient as 90% is lost at each stage through **processes** such as respiration, excretion etc. [4]

12

(c) Nutrient cycling model.



Candidates should be awarded up to [5].

for the three transfers and the two soil input/outputs. Arrow directions must be correct for each mark awarded. [5]

AVAILABLE MARKS

12

- 3 (a) (i) The resource shows an area of **high pressure**. Most of the UK and Ireland is in an area where the pressure is over 1024 mb. Candidates should **describe the pattern** and give at least **one value**. [2]

- (ii) Summer anticyclones produce heat-wave conditions, which may lead to drought. Long hours of strong sunshine are usual, due to clear skies and high angle of the Sun. Effects on people might include increases in tourism and high risks of sunburn/heat stroke etc. There might be water rationing and hosepipe bans. Drought could also lead to poor crop yields and higher food prices.

Candidates should **clearly describe** the weather characteristic [1] and explain how it affects people. [1]

([2] + [2])

[4]

(b) Hurricanes form over tropical oceans, usually between 5° and 20° north and south of the equator where the Coriolis force is strong enough to cause rotation. They usually form on the western side of these oceans, where the descending air from the subtropical high pressure systems is weaker, allowing large-scale upward convection to occur. There must be an upper atmosphere air rotation so that air sucked into the hurricane can spray out into the upper atmosphere.

Ocean temperatures must be greater than 27 °C to a depth of around 60 metres. There must already be convergence near the surface of the ocean. Award up to [6] for six relevant facts on location and atmospheric or oceanic conditions. No reward for time of year.

[6]

Section A

AVAILABLE MARKS	
	12
Section A	36

Section B

AVAILABLE
MARKS

- 4 The details of the answer will depend on the case study chosen. Candidates must make reference to a large-scale drainage basin or its delta to achieve Level 3. Physical causes could include seasonal climatic changes, e.g. monsoon, spring snowmelt, wet season, impact of slope processes (topography), variations in soil properties, storm surges, hurricane impact etc. Human factors might include deforestation urbanisation, farming practises, dam building and channel alteration.

Level 3 ([9]–[12])

Candidates produce a balanced answer exploring a number of both physical and human factors. The answer includes good reference to case study examples.

Level 2 ([5]–[8])

Candidates discuss one or two physical and human factors, but with poor reference to their case study material, or produce an unbalanced answer which concentrates on either the physical or the human factors. The answer may be limited or superficial.

Level 1 ([1]–[4])

The answer is generalised or brief. It may be lacking case study references.

The quality of communication may be poor.

[12]

12

- 5 The question requires candidates to describe how people have managed a specific mid-latitude grassland area. Good candidates will include good and bad management techniques in their answer. Candidates may include background information which outlines the links between climate, soil and vegetation and other variable factors such as rainfall, wind erosion and water erosion. Poor management might include overgrazing, monoculture etc. Good management techniques might include returning areas to their natural state by establishing wildlife parks/protected areas or introducing farming practises which improve soil structure or moisture content and increase soil nutrients. Farming techniques could include crop rotation, planting shelter belts, wheat stubble, mulching and contour ploughing. There should be clear reference to case study material.

Level 3 ([9]–[12])

Candidates produce an answer which clearly describes a variety of ways in which a mid-latitude grassland ecosystem can be managed. There is good use of relevant case study information to develop the answer.

Level 2 ([5]–[8])

Candidates produce a less detailed answer or fail to describe the management techniques in detail. Reference to case study material may be less effective or depth of knowledge may be limited or superficial.

Level 1 ([1]–[4])

Candidate's knowledge and understanding are limited and reference to case study material is poor. There may be generalisations or inaccuracies. The quality of communication may also be poor.

[12]

12

6 While the question does not require candidates to explain how depressions form it does ask them to describe their structure, once formed. This would include reference to the air masses involved (temperature and humidity), the three sectors of a typical depression and the types of front which separate these sectors. Candidates must clearly describe how the weather associated with the passage of a depression affects the human environment. No specific case study references are required although some candidates may refer to specific storm events to illustrate their answer.

Description might include reference to changes in pressure, temperature, wind speed and direction, cloud types, precipitation etc. Most candidates will probably concentrate on negative effects, such as strong winds, especially at fronts, which can cause damage respecially in urban areas, e.g. loss of electricity supplies, disruption of communications and rescue agencies due to fallen trees, crop damage, coastal flooding etc. Good candidates may mention positive factors such as the filling of reservoirs and groundwater stores for future use.

Level 3 ([9]–[12])

The candidate produces a detailed answer which clearly describes the structure of frontal depressions in mid-latitudes and explains a range of ways the associated weather effects the human environment.

Level 2 ([5]–[8])

A less detailed answer which either, does not clearly describe the structure of a depression or gives only a few of the ways in which the associated weather effects the human environment.

Level 1 ([1]–[4])

An answer which fails to describe the structure of a depression or fails to link the associated weather conditions to the human environment. The quality of communication may also be poor.

[12]

12

Section B

24

Total

60

**AVAILABLE
MARKS**



Rewarding Learning

ADVANCED SUBSIDIARY (AS)

General Certificate of Education

January 2008

Geography

Assessment Unit AS 2

assessing

Module 2: Themes in Human Geography

[ASG21]

WEDNESDAY 23 JANUARY, AFTERNOON

MARK SCHEME

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Section A

**AVAILABLE
MARKS**

- 1 (a)** Economic: employment status, housing tenure [1] Income not accepted.
Social: house type, number of people living in house, age of occupants
etc. [1] [2]
- (b) (i)** Xinjiang B
Guangdong A [1]
- (ii)** Any valid observation. Most candidates will discuss the fact that the pyramid A had a large % of economically active people, especially females. This reflects the fact that Guangdong is a special economic zone with a large number of employment opportunities.
No figures quoted maximum [3]. [4]
- (c) (i)** Overpopulated: B or C
Underpopulated: A or D [2]
- (ii)** Optimum population is where the population numbers are sufficient to use the available resources efficiently. Any more or less would result in a lowering of the standard of living. Optimum population is achievable but it is a dynamic concept. Once achieved the balance between resources and population could change further. No discussion of “achievable”, maximum [2]. [3]
- 2 (a)** The total world population has increased from 4.08 billion to 8.29 billion [1]. World urban populations have increased from 34% to 61% [1].
The urban population of LEDCs has increased from 0.81 billion (53%) to 4.30 billion (79%) but the % urban population in MEDCs has fallen from 47% to 21% [2]. No figures quoted, maximum [3]. [4]
- (b)** The sphere of influence of a cinema would be greater as this is a higher order service. The local shop would be a low order service selling low order goods. Low order goods are brought frequently and therefore we do not want to travel far to obtain these. High order goods and services are used less frequently, therefore when we do use these services we are prepared to travel further. Hence the larger sphere of influence. Accept that there are fewer cinemas so people travel further to reach one. [2]
- (c) (i)** There are no limitations on which model should be drawn. However, most candidates will discuss Hoyt or Burgess.
Completeness [1]
Accuracy [1]
Key/labels [2] [4]
- (ii)** The candidate must have a clear limitation in connection with the model they have drawn. Those who simply discuss the limitations of models in general should get maximum [1]. For example, candidates may discuss the fact that such clear cut boundaries rarely exist in reality. [2]

12

12

- 3 (a) The resource shows that the worlds 20 poorest countries have not increased their GDP per capita but the worlds 20 richest countries have seen massive growth in their GDP per capita, from 11000 to 33000. The world’s richest countries are getting richer whilst the poor are not developing [3]. Figures must be quoted for full marks.
No figures maximum [2]. [3]
- (b) (i) Within Europe there are core and periphery areas. There are marked variations in GNP distribution within Europe. Areas with lower figures include Spain and Northern Ireland. Higher values can be found in Italy, France, Germany. However, there are also variations within countries. For example Italy and the UK have strong regional contrasts in GNP, e.g. S. Italy (less than 80%) but N. Italy (120% and over).
Maximum [4] if no figures are quoted. [5]
- (ii) Candidates must have reference to their case study. Those students who do not will be limited. There is a range of human factors that are acceptable – employment opportunities, government investment migration etc. Candidates who just generally describe how these factors affects development with no case study specifics, maximum [2]. [4]

Section A

AVAILABLE
MARKS

12

36

Section B

AVAILABLE
MARKS

Answer **any two** questions from this section

- 4 Candidates may discuss either a MEDC or LEDC. The question asks for changing structure over **space** so do not accept distribution or changing structure over time. They should be able to describe at least two specific areas in their country where the population structure is different and offer explanations for this pattern. Places needed to be mentioned. They must have specific factual and detailed information on their chosen case study.

Level 3 ([9]–[12])

The candidate has an appropriate case study with detailed place information. They are able to fully describe the variations in population structure and offer a range of reasons for the pattern identified.

Level 2 ([5]–[8])

Still a good answer but the depth of knowledge may be less than above. Variations in population structure may be described but place and figures may be limited. The explanation may also be weaker.

Level 1 ([1]–[4])

A poor answer lacking any case study details. Terminology and understanding is weak. Candidates who discuss variations over time or population distribution will be in this level. [12]

12

- 5 MEDC city required – levels divided by two if LEDC chosen. The processes of suburbanisation and counter urbanisation will need to be understood and explanation of how each has affected their chosen city. As in previous case study questions, detail is required, if places have to be mentioned. A general piece on each of the two processes with a name attached at the end is not a case study and should be only awarded Level 1 mark. If either process is missed completely – levels divided by 2.

Level 3 ([9]–[12])

A good explanation of the two processes is given with detail of places and the effects of each process are related to their chosen case study. Above all this answer satisfies the requirements of a case study – it names places and there is detail. The description is written in good English and the candidate handles geographical terms well, where applicable.

Level 2 ([5]–[8])

This is still a good answer but the detail/depth is less than above. Both processes are examined but one may be weaker than the other. The quality of expression may be weaker than the previous level.

Level 1 ([1]–[4])

Apart from the sub optimal situation mentioned above, an answer at this level may deal with causes rather than effects, or be seriously flawed through lack of detail and/or accuracy so that it fails to satisfy the requirements of a case study. There may also be errors in grammar. [12]

12

- 6 This essay will require the candidates to outline both the strengths and weakness of Aid. They will talk about dependency, misappropriation, corruption and short term relief following disasters for example. They must however, be able to give an opinion. They must make a statement indicating if they think Aid is an invaluable tool in promoting development or not.

Level 3 ([9]–[12])

A good detailed answer that clearly understands that Aid has both strengths and weaknesses. They are able to offer an opinion on the usefulness of Aid. Geographical terminology will also be good, and places clearly used for illustration.

Level 2 ([5]–[8])

A less detailed answer will be provided here. Candidates who fail to provide an assessment on the usefulness of Aid will be awarded this level. Very unbalanced answers or answers that do not reference place will also be placed in this level.

Level 1 ([1]–[4])

A candidate whose answer is solely either strengths or weaknesses will be placed into this level. Quality of written communication will also be poor. [12]

Section B

Total

**AVAILABLE
MARKS**

12

24

60



Rewarding Learning

ADVANCED SUBSIDIARY (AS)

General Certificate of Education

January 2008

Geography

Assessment Unit AS 3

assessing

Module 3: Techniques in Geography

[ASG31]

THURSDAY 17 JANUARY, AFTERNOON

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Part A

**AVAILABLE
MARKS**

Total marks available – [10]

1 Table of Data

Up to [3] for presenting a table which:

- has been computer-generated and contains data of a sufficient quality to meet the aim of the investigation;
- displays proper conventions such as a title, columns labelled with units of measurement specified (where appropriate) etc. Also key (if necessary);
- includes raw data appropriate for graphing and for statistical analysis. [3]

3

2 Summary Report

Level 3 ([6]–[7])

A summary report with a precise aim and sections set out clearly for planning and data collection. There should be a well-structured description of pre-fieldwork planning and methods of data collection (these should relate to the stated aim as well as the tabulated data). Quality of written communication is of a high standard. Deduct up to [2] for reports which exceed the word limit.

Level 2 ([3]–[5])

The summary report may be rather brief and may fail to address both planning and data collection sections in sufficient depth. Alternatively the report may be adequate in length but may lack structure and may be less coherent. The candidate's ability to communicate may be reasonable in standard. Deduct up to [2] for reports which exceed the word limit.

Level 1 ([1]–[2])

A summary report which may be brief and provides little relevant detail on planning and data collection methods. It may be partially completed or exhibit a lack of understanding. Alternatively the report may be of sufficient length but contain little relevant material. Quality of written communication is limited. Deduct [1] for abuse of word limit. [7]

7

Part A

10

Part B

AVAILABLE
MARKS

- 1 (a) **Suitability** – candidates need to describe specific aspects of the physical or human environment which make their chosen site suitable for their geographical investigation.
Award [2] for a well developed site justification.
Award [1] for an answer which is limited/lacks specific detail.
Maximum [1] for answers which do not detail the geography of the study site itself.
[0] if location is not stated **and** cannot be got from the report. [2]

- (b) No marks are awarded for the type of sampling technique outlined. Obviously the type of sampling may vary according to the fieldwork and should be made evident within the report.
Award up to [3] for the explanation of the appropriateness of the selected process i.e. the advantages of the chosen method. No credit for a different type of sampling other than that used in the report. No credit for “**how**” it was conducted – marks are clearly to be awarded for “**why**”.
Allow up to [2] for a discussion of **how** efforts were made to ensure that “representative” data was obtained. Again this will depend on the actual study. Candidates may discuss sample size, incorporation of subsets (if relevant), adequate coverage along a transect etc.

Alternative Option

Up to [3] for candidates who present the alternative option – a full explanation of why sampling was considered unnecessary, impractical etc. for the chosen investigation.

Up to [2] for a discussion of how the data collected should be sufficiently representative for the aim of their study. [3]

- (c) (i) The breakdown of marks is as follows
Title [1] – must be specific and accurate
Conventions [2] – for labelling of axes (variables and units)
– deviation of key if appropriate
– for construction of graph using a manageable scale to encompass all values
Accuracy [3] – for accurate and precise plotting of values from table.
Method [1] – selection of a method/technique appropriate
– for the type of data extracted from the table (e.g. a line graph will require continuous data)
– for the aim/hypothesis stated

T – 1
C – 2
A – 3
M – 1

[7]

(ii) For [2] candidate needs to analyse the graphical trend and quote accurate values. Anomalous/residual values may be highlighted.
Award [1] for general description which may lack the quotation of values. [2]

(iii) For [2] candidate needs to reflect on the value of the graph in the investigation. Better candidates may recognise that a graphical trend, without statistical analysis, may be insufficient to formulate a reliable conclusion.
Award [1] for general answer with a more limited evaluation of the graph's usefulness [2]

(d) Answers will vary according to the fieldwork chosen but marks are awarded for candidates' ability to reflect on the factor selected and explain how it may have influenced the reliability/accuracy of the data collected **and** the nature of the geographical conclusion formulated. Candidates may explain their chosen factor positively or negatively in the context of this question
Award [3] if the candidate selects a relevant factor and explains accurately how it may have influenced the reliability of the data obtained **and** the type of conclusion stated.
Award [1]–[2] for less detailed/precise answers which do not address all aspects of the question.
Maximum [2] if no consideration given to conclusions [$\times 3$].
Maximum [1] if answer is valid but theoretical, with no convincing link made to individual primary data or fieldwork [$\times 3$].
(3 \times [3]) [9]

25

2 (a) (i) Award [1] for an appropriate mapping technique if it is one which corresponds with the mapping technique attempted by the candidate in **Resource 2B**. A choropleth or dot distribution map would be expected. [1]

(ii) Title [1] – must be specific and accurate
Mapping [6] – breakdown as follows

- **Completeness** [2] – using an appropriate mapping technique
- **Accuracy** [3] – the following errors/omissions may reduce accuracy
 - Lack of intensity of tone to display values
 - Intensity of tone wrong way round
 - Overlap in class intervals
 - Gaps between class intervals
 - Unnecessary, or too few, classes (<3) to encompass all the data
- **Precision** [1] – a level of care is required

Marks apply to both map and key.
If no key is provided – Max [1] for title only

T – 1
C – 2
A – 3
P – 1

[7]

- (b) (i)** This is the middle value when the data is arranged in numerical order [1]
- (ii)** 35 years. [1]
- (iii)** Northern Territory [1]
- (c) (i)** It may be necessary to consider the **size** of the quadrat for a number of reasons.
- The quadrat represents a sample “unit” area and thus its size relative to the area of study is essential to ensure representative coverage.
 - The type of the vegetation is another influential factor. Larger, more abundant species such as heaths require larger quadrats compared to smaller plants which occur numerously within a smaller sampling frame.
 - The distribution of species across an area can also make quadrat size an essential consideration. Sparse or thinly scattered vegetation would require a larger quadrat compared to more abundant, denser vegetation.
- Award [2] for one well developed reason.
Award [1] for a logical reason which is not fully explained. [2]
- (ii)** To investigate the hypothesis stated it would be essential to measure:
- Vegetation species (biodiversity) [1]
 - Cover/abundance/density of each species [1] [2]
- (iii)** Candidates need to discuss a procedure in which the distribution of quadrats in the area is such that the position of each quadrat is independent of all other quadrats. A recommended method involves laying out two lines at right angles to serve as axes (on a map or in the field). A random number generator will produce a set of numbers which act as co-ordinates to locate each quadrat in turn.
Award [3] for a detailed answer which shows sound understanding of a random sampling procedure.
Award [1] or [2] for valid, but less well developed answers.
Up to [2] for procedures in which randomisation of quadrats is being attempted by closing of eyes or throwing over shoulder. These are commonly used methods but are not totally unbiased since there tends to be oversampling of the area close to the previous quadrat. [3]
- (d) (i)** Candidates should recognise obvious weaknesses
- Question 1 – Age has overlapping categories
 - Question 5 – frequency of visit categories are not all-inclusive
 - Question 6 – should include “other” to cover alternative activities
 - Question 7 – is presumptuous as the respondent may not necessarily have used the services listed and thus would be unable to rate them
 - Question 1 – Personal questions relating to age should be avoided
 - Question 4 – Questions such as – “Are you on your own?” are also of a personal nature and should be avoided [1]

(ii) Award up to [2] for an understanding of how the sphere of influence is delimited using data obtained from Question 2. The home locations of visitors are plotted on a map [1] and the outer points connected to define the catchment [1] [2]

(iii) Apart from ensuring the questionnaire is well designed, the interviewer also needs to pay close attention to how, when and where the respondents are chosen if data is to be reliable. Candidates may **explain** factors which include a consideration of sample size, sampling method, time of day, day of the week, prevailing weather conditions, seasonality etc.

No credit for pilot testing or questionnaire design.

Award [2] for any valid well explained factor.

Award [1] for any valid, but less well explained factor.

(2 × [2]) [4]

Part B

25

50

Total

60

**AVAILABLE
MARKS**

