

**Published Mark Schemes for  
GCE A2 Geography**

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MARK SCHEMES (2010)

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.

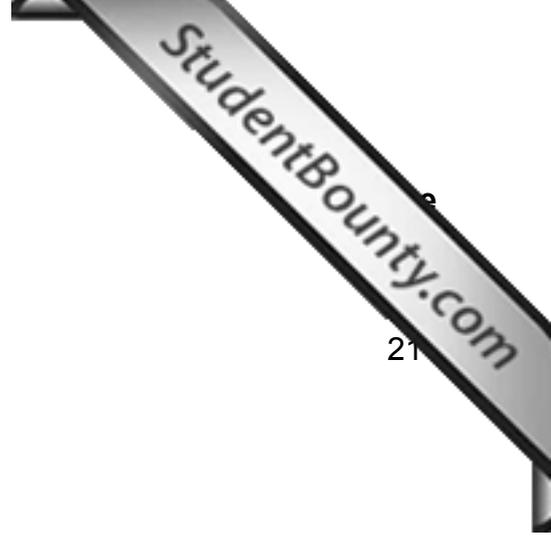


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New  
Specification



*Rewarding Learning*

**ADVANCED**  
**General Certificate of Education**  
**2010**

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## **Geography**

**Assessment Unit A2 1**

*assessing*

**Human Interactions and Global Issues**

**[AG211]**

**FRIDAY 21 MAY, MORNING**

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**MARK  
SCHEME**

## Introductory Remarks

The assessment objectives (AOs) for this specification are listed below. Students must:

AO1 demonstrate knowledge and understanding of the content, concepts and processes;

AO2 analyse, interpret and evaluate geographical information, issues and viewpoints and apply understanding in unfamiliar contexts;

AO3 select and use a variety of methods, skills and techniques (including the use of new technologies) to investigate questions and issues, reach conclusions and communicate findings.

## 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 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.

**General Descriptions for Marking Criteria**

<b>Knowledge and Understanding</b>	<b>Skills</b>	<b>Quality of Written Communication</b>	<b>Level</b>
<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, punctuation and grammar.</p>	<p>3</p>
<p>The candidate will display an accurate to good knowledge and understanding of many of the relevant concepts/ ideas. Much of the body of knowledge that can be expected is given.</p>	<p>The candidate will display evidence of the ability to analyse and interpret the resource material but gaps, errors 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, punctuation and grammar. Legibility is satisfactory.</p>	<p>2</p>
<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 or misapprehensions may 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, punctuation and grammar. Writing may be illegible in places.</p>	<p>1</p>

## Section A

1 (a) A barrier is something which has to be overcome in a migration process such as the cost of the journey. Illegal migrants entering Europe presently from North Africa find the Mediterranean to be a considerable barrier. [2] for the definition; [1] for the example. [3]

(b) (i) The Burmese migrate to Thailand; the Thais migrate to Taiwan [1]. The map suggests why: Burma is poorer than Thailand which is poorer than Taiwan. From the texts, comes labour needs, locals refusing to carry out low status jobs etc. [3] [4]

(ii) Use the Resources, so there is no need for extra material.

- Benefits: money, including remittances, filling labour needs in industry, the house and, especially in Taiwan, elderly care. So the migrant, his/her family back home and the reception country all benefit [3]. The other [1] for details taken.
- Problems: Illegal labour and their dangerous journeys; lack of human rights; loneliness; missing local cultures (Songkran is fun, at least the first time you get soaked), perhaps also religion, lack of care facilities for migrant workers; poverty, mobile phones are not costly in absolute terms [3]. The other [1] for details taken.[8]

If they put it together, mark in levels out of [8]

Level 3 ([7]–[8])

Level 2 ([4]–[6])

Level 1 ([1]–[3])

No reference to Resources Level 1

2 × [4]

[8]

(c) This is from Box 1 (ii), where a list of factors appear: economic, social, political, cultural, environmental, HIV/AIDS. They have to deal with factors, plural, but do not expect the whole list to be covered. If it is, that's fine and award them for breadth; if only two are covered, that's fine, too and award them for depth.

- No global contrasts, Level 2 maximum.
- One factor only, Level 2 maximum.
- Either fertility or mortality absent, Level 2 maximum.
- More than one problem, Level 1.

### Level 3 ([11]–[15])

Level 3 answers are full. Not one of the several requirements is absent. Precise balance is not required but everything is covered. Command is displayed, partly through proper use of language and terminology.

### Level 2 ([6]–[10])

Several sub-optimal routes to Level 2 were identified if the answers are otherwise good. Full answers will have the necessary range but probably lack depth and detail.

### Level 1 ([1]–[5])

Multiple problems as identified. Otherwise answers will have some merit but will be lacking in command and understanding, perhaps with weak language use. [15]

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2 (a) The epidemiological transition is a change from people dying of infectious diseases or problems associated with malnutrition etc towards one where people tend to die of degenerative diseases. It is associated with development and the Demographic Transition Model. [3] for the epidemiological transition; [2] for global contrasts. [5]

(b) (i) and (ii)

Policy:

'Limiting the promotion of fertility', so the policy is not working properly, they have to evaluate it. The policy provides job security and give money in various ways but the childcare facilities are not open long enough and there are not enough places; the money is not sufficient to compensate for a lost career and the job protection has 'in theory' added, which suggests it doesn't always work out that way. If only policies are listed, max [2].

Culture:

Demands of jobs and the necessary socialising (in the evening in Tokyo bars and restaurants are full of men in suits who have not yet gone home); the work ethos; the obligations of childrearing; the disinclination for women to go and live with their in-laws and give up their careers and freedoms. And notice the late age of marriage. It all goes to say that the decision to have a child by a Japanese woman is a critical one indeed and with a TFR of only 1.29 many are not making that decision. If they just list and do not go further, max [2].

They may put it all together given the way the question is set out without separate marks. If they do, mark out of 10 (Level 3 ([8]–[10]); Level 2 ([4]–[7]); Level 1 ([1]–[3])).

2 × [5]. [10]

(c) The two small-scale case studies, that is one on out-migration and one of in-migration from Box 2 (iv). It is related to economic activity and social stability. So of the three things they have to study, service provision is absent from the question and, hopefully, the answer.

- If only one case study, maximum Level 2.
- If only one of economic activity and social stability maximum Level 2.
- The focus of the answer has to be on the implications, if it is not, Level 1.
- Multiple problems, Level 1.

**Level 3 ([11]–[15])**

Do not expect perfect balance but all aspects of the question have to be covered in acceptable depth. The two case studies are detailed and there is proper focus on the implications of migration in the two aspects to be considered. Language and terminology are at least adequate.

**Level 2 ([6]–[10])**

Otherwise good but sub-optimal answers can be here. Full answers will lack some balance perhaps and almost certainly depth.

**Level 1 ([1]–[5])**

Sub-optimal routes to Level 1 were shown. Otherwise the answer though having something to reward will be flawed with problems of coverage, understanding and/or language. [15]

3 (a) All three terms are needed: Redevelopment = start again. Regeneration = breathe new life into area. Restoration = restore to former beauty (possibly different use). They may have examples, but these are not required by the question and full marks are available for answers not using them.  $3 \times [2]$ . [6]

(b) 'With reference to the Resources', which means they do not have to bring in any extra material. Benefits and problems are in the question, so if the answer misses either, maximum Level 2. If there is no Resource use and the answer is purely theoretical, Level 1. No reward for material that is not related to brownfield developments.

**Level 3 ([7]–[9])**

There is specific, detailed Resource use and the answer has good balance between negative and positive and focuses properly on brownfield development. Language use and terminology are at least adequate.

**Level 2 ([4]–[6])**

A good answer which is not balanced between negative and positive can be here. Full answers may describe rather more than discuss or otherwise lack depth.

**Level 1 ([1]–[3])**

Answers here are worthy of reward, but, other than the sub-optimal case above, they will have limited depth, detail and/or understanding. [9]

(c) This is Box 3 (ii), which gives them one urban case study with knowledge of public transport, integrated transport networks, traffic cells, parking policies and pedestrianisation. Do not require everything on this list to be covered, but they have to look at strategies, plural, so if there is only one mentioned, confine to Level 1.

No evaluation, maximum Level 2.

No case study, Level 1.

**Level 3 ([11]–[15])**

There is an appropriate case study and it is handled properly with real detail being shown. The policies are clearly set out and the answer then evaluates them with at least adequate language use and terminology.

**Level 2 ([6]–[10])**

A good, detailed description can be here; otherwise answers will cover the full range of material but lack something in terms of depth and detail.

**Level 1 ([1]–[5])**

Sub-optimal routes were noted above, full answers will lack detail and understanding and may have problems with language. [15]

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4 (a) 'Briefly explain', so we are not looking for a great deal of depth here. However, they should have learnt sustainable development with reference to social, economic and environmental considerations, so for answers getting [4] or [5] there has to be some appreciation that there is a range of issues involved in the concept. [5]

(b) They are given three photographs of Mallorca, one of which is from almost 20 years ago they should note, also a text. So there is a good deal of material to interrogate and the question asks them to deal with these Resources only, without the need for any extra material. What they do need is to understand what Local Agenda 21 imposed upon local councils so they can see how far the case of Calvià fits the process. No resource use, Level 1.

**Level 3 ([8]–[10])**

There is detailed interrogation of the Resources and the impact of Local Agenda 21 upon Calvià is discussed in some depth. The language and terminology are both appropriate.

**Level 2 ([4]–[7])**

There is some use of the resources and a proper focus upon Local Agenda 21, but the answer may lack something in terms of depth and understanding.

**Level 1 ([1]–[3])**

Answers with poor or absent resource use will be here as will full answers that lack sufficient understanding to receive higher reward. Language use may be poor. [10]

(c) Three items must be covered from that list. It is not [5] marks each as they should be discussed within the context of their case study in a discursive way, but answers which have only two items can receive Level 2 maximum. Only one item, Level 1. If there is very limited case study use or none at all, confine to Level 1.

**Level 3 ([11]–[15])**

The case study is appropriate and detailed. Land-use and planning are covered and the three items chosen are all mentioned with reasonable balance between them.

**Level 2 ([6]–[10])**

A sub-optimal route to Level 2 was detailed above. Full answers will lack some command or detail, probably with regard to the case study.

**Level 1 ([1]–[5])**

Sub-optimal routes to Level 1 were detailed above. Full answers will have some merit but will be flawed in some way, perhaps lacking understanding or struggling with language. [15]

- 5 (a) Social impacts include deaths, injury, ethnic cleansing, refugees, genocide, lack of food and medical supplies.

Economic impacts include disruption of industry and services through bombings, the reduction in investment as a result of ethnic conflict, and the damage to infrastructure.

They will have a case study of ethnic conflict so they should have an adequate range of examples here. There is no list of social and economic impacts they have to address so accept anything plausible. It is not essential to use actual examples but that would make the answer easier and more convincing. Max [2] = [1] + [1] for ethnic diversity.

Award 1 mark for correctly identifying one social and one economic impact and up to 2 marks for a brief discussion.

2 × [3] [6]

- (b) Pluralism maintains ethnic diversity because it preserves the separateness or distinction between the various groups. Pluralist societies (Northern Ireland) can have separate schools even hospitals, places of worship, political parties, newspapers and cultural traditions for each of the main groups. In some cases there may even be linguistic differences. With little meaningful interaction the various groups remain separate. Discrimination is often an outcome of pluralist societies where the ruling group has preferential treatment in the allocation of jobs, housing etc. Such attitudes lead to an under current of distrust amongst the minority groups. In Kenya there are many tribal or ethnic groups (map with figures) with mutual distrust amongst them. Political parties organised on ethnic lines and the largest group (Kikuyu) had been in power for over thirty years. Other groups felt discriminated against and when it seemed that an election result in 2008 was ignored serious ethnic conflict followed. Look for an understanding of pluralism and how it maintains ethnic diversity and thorough resource use.
- If there is no extra material used confine to level 1
  - If there is no resource use confine to level 1

**Level 3 ([7]–[9])**

A thorough answer, which makes good use of the resource and demonstrates an understanding of pluralism and how it maintains ethnic diversity and has adequate extra material, would be at this level. The candidate demonstrates sound understanding and writes in good English.

**Level 2 ([4]–[6])**

An answer at this level will still have good material, but the depth and detail will be less than the previous level. There may inadequate use of the resource or the concept of autonomy is not fully evaluated. English is of good quality.

**Level 1 ([1]–[3])**

An answer at this level will have serious weaknesses in terms of detail, depth and accuracy. There may also be errors in English. [9]

- (c) The specification lists migration, colonisation and annexation as processes creating ethnic diversity. The choice of case study can be either LEDC or MEDC. Obviously, the detail of their answer will depend on their case study choice. We might see the processes of colonisation and annexation operating mainly in a LEDC. In the case of a LEDC colony migration of a ruling class and military personnel or the forced movement of a labour force would all lead to ethnic diversity. In a MEDC migration of those from former colonial territories looking for a better lifestyle etc leads to ethnic diversity. In recent times the migration of economic migrants and asylum seekers are contributing to increased ethnic diversity. They need to give a sound description of the ethnic diversity of their chosen country and then explain how this ethnic diversity came about. They do not need to address all of the three processes mentioned in the specification but at least two should be discussed.
- If there is no case study and there is only a discussion of processes, then award out of level 1.
  - If there is only one process used award from level 2 maximum
  - If case study is at the wrong scale (city), maximum level 1.

**Level 3 ([11]–[15])**

The pattern of ethnic diversity is outlined clearly with facts and figures. There is good understanding shown. The processes are understood and there is depth and detail. The answer is well written.

**Level 2 ([6]–[10])**

Apart from the situation described above, there is less detail and depth throughout or the processes are handled less rigorously than at the previous level. English is still good.

**Level 1 ([1]–[5])**

Apart from the situation described above, this answer is lacking in detail and depth on all aspects or there may be incorrect information. Use of English may be flawed.

[15]

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6 (a) International intervention can be in the form of international organizations such as the United Nations, NATO, the European Union, the Organisation of African Unity or stem from individual nations with some interest in the conflict zone or from a neutral country. The nature of the international response varies from supplying arms or financial/technical assistance to one side, to active engagement in the conflict to brokering a cease-fire or an end to hostilities. Peace Processes attempt to find some areas of common ground between the opposing factions and set out a programme of measures that will address some of the areas of contention on both sides. Peace processes can take time to achieve a permanent peace and some break down and new deals are negotiated. (Northern Ireland, Sri Lanka, Middle East)

Although there is no requirement for examples this question is probably easier handled through the use of an example. They can draw on their case study detail but as there are only 6 marks in total we are not looking for long answers. Each process has to be explained but they may incorporate peace processes with international intervention. That is perfectly acceptable as are two stand alone answers.

- If they incorporate the two processes, mark using levels: Level 3 ([5]–[6]), Level 2 ([3]–[4]), Level 1 ([1]–[2])
- 2 × [3] [6]

(b) Economic outcomes: (Resource 6A) White groups have the lowest unemployment figures – white Irish is slighter higher than white British but both groups are lower than 5%. All of the non-white groups have higher unemployment figures. Black Caribbean have the highest male unemployment at 11% and Pakistani women have the highest unemployment figures at 20%. This means that minority groups in Britain as shown by this have a greater percentage of economically disadvantaged people.

Social outcomes: (Resource 6B) For the most part minority groups have a younger age structure than the white population and have large percentages in the economically active age groups. The mixed racial groups have almost 50% of their population under the age of 15. The Chinese have the highest percentage in the economically active age groups.

Spatial outcomes: (Resource 6C) London has the highest percentage of non-white population – 45% of them live in London.

This is straightforward. They are asked to describe so make sure they do see a pattern and back it up with figures from the resources. They do need to use each resource, so award from 3 marks for each resource.

No figures – maximum [2] in each case

3 × [3] [9]

- (c) There are several things to do here. Ethnic identity has to be explained with reference to any two primary and any two secondary factors and examples are needed. The specification lists race, nationality, language, religion and perceived ethnic identity as primary factors and social status, residential concentration, age, gender and caste as secondary factors.
- If they only look at primary or secondary factors award from level 2 maximum.
  - If they only look at one primary and one secondary factor award from level 2 maximum
  - No place references, maximum level 2
  - Multiple errors award from level 1 only.

**Level 3 ([11]–[15])**

There is good detail here. The candidate addresses all aspects of the question competently. The detail on primary and secondary factors is accurate, the examples used are relevant and the answer is written in good English.

**Level 2 ([6]–[10])**

Apart from the situation described above, this is still a good answer and the candidate is still in control of the topic. The main reason for awarding from this level is lack of depth and/or detail. Use of English is still good.

**Level 1 ([1]–[5])**

The sub-optimal situation above is at this level. Otherwise, a level 1 answer will most likely be lacking in relevant accurate detail. There may also be grammatical errors.

[15]

30

**Section A**

**60**

## Section B

- 7 (a) Pollution is not easily defined for a number of reasons including, for example: a persistent lack of international/political agreement on what constitutes pollution (some items may be considered pollutants in certain circumstances and resources in others); imprecision and/or subjectivity in existing definitions; lack of knowledge of, for instance, critical loads; the wide variety of sources, destinations, impacts (direct and indirect) frequency (rare and continuous), scale, pathways (increased concentration over time versus diffusion over time) etc. of pollutants.

If only a simple statement/description is presented, or if only one problem is presented, a maximum of [2] marks may be awarded. Detailed, valid comments which cover more than one relevant problem may be awarded a maximum of [4]. [4]

- (b) A clear statement of the aim/s of a primary data collection relating to air pollution should be given, along with relevant explanation of the collected results.

### Level 3 ([5]–[6])

Clear, relevant aim/s are stated fully and with clarity. A detailed, valid and relevant explanation of the results is given. Terminology is good and the candidate shows sound understanding of the topic.

### Level 2 ([3]–[4])

Although relevant aims are stated, they may lack clarity, precision or detail. Although an explanation of the results is presented, it may be under-developed or restricted in detail. There may be inadequacies in terminology.

### Level 1 ([1]–[2])

Inappropriate aims may be described, they may not be described accurately, the statement of aims may be omitted, or the aims may not relate to the topic of air pollution. The explanation of results may be omitted or, if present, be unrelated to the aims of the investigation, cursory or invalid. There is limited use of terminology. [6]

- (c) As a global issues case study, each candidate is required to use their knowledge/understanding to answer the question set. They will have evaluated evidence relating to the climate change/global warming debate and whether or not development should be curtailed to counteract it. Candidates may choose to agree or disagree, provided their justification is valid. Some of the points they may choose to discuss might include:

### Factual evidence

- MEDCs are the greatest producers of CO<sub>2</sub>. Northern hemisphere is responsible for 95% of CO<sub>2</sub> production, and the USA alone accounts for 25%
- MEDCs are increasing their efficiency of energy use and actively looking for alternative energy sources
- LEDC energy consumption is increasing with economic advancements, population increase and rising expectations
- There is an unknown capacity of oceans to continue to absorb CO<sub>2</sub>, uncertainty about deforestation rates etc.

**Queries/Ethics**

- Is global warming actually occurring?
- Should certain areas of the globe be permitted to prosper whilst others are not?

Thus, the candidate is asked to give an opinion on the statement and to provide a justification for this opinion.

**Level 3 ([14]–[20])**

At this level, the candidate has provided a detailed answer. Each element of the question is addressed (opinion regarding statement, justification, MEDCs, LEDCs). A clear opinion is given regarding the statement; the candidate is able to evaluate the statement and to make a reasoned judgement as to where they stand in relation to it. The justification provided is well-developed, detailed and valid; this would require detail specific to their study of the issue. Both MEDCs and LEDCs are strongly addressed. The answer is well written, using appropriate terminology and displaying very good written communication skills.

**Level 2 ([7]–[13])**

An answer at this level is a competent one, although the depth/detail provided may be constrained. For example, the candidate may not have provided adequate supporting evidence in their justification. However, each element of the question is addressed (opinion regarding statement, justification, MEDCs, LEDCs), although, perhaps, in an unbalanced or unstructured manner. Although an opinion is given regarding the statement, it may lack clarity. Although the justification provided is valid, it may be under-developed or restricted in detail. Both MEDCs and LEDCs are addressed. The answer is generally competently written, although the use of terminology may be restricted.

**Level 1 ([1]–[6])**

At this level, the answer is seriously flawed either in accuracy, depth and/or detail. One or more elements of the question (opinion, justification, MEDCs, LEDCs) may be neglected. Comments may be invalid, cursory, non-relevant or indicative of a lack of understanding. Use of terminology may be poor and/or written English may be flawed.

[20]

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- 8 (a) The medical uses of nuclear energy include, for example: use of radiation to provide medical imaging through X-ray radiography, MRI scanning in order to provide diagnostic information; radiotherapy - using radiation to weaken or destroy targeted cells.

If only a simple statement/description is presented, or if only one valid use is given, a maximum of [2] marks may be awarded. Detailed, valid comments inclusive of more than one use may be awarded a maximum of [4].

- (b) A clear statement of the aim/s of a primary data collection relating to nuclear energy should be given, along with relevant explanation of the collected results.

**Level 3 ([5]–[6])**

Clear, relevant aim/s are stated fully and with clarity. A detailed, valid and relevant explanation of the results is given. Terminology is good and the candidate shows sound understanding of the topic.

**Level 2 ([3]–[4])**

Although relevant aims are stated, they may lack clarity, precision or detail. Although an explanation of the results is presented, it may be under-developed or restricted in detail. There may be inadequacies in terminology.

**Level 1 ([1]–[2])**

Inappropriate aims may be described, they may not be described accurately, the statement of aims may be omitted, or the aims may not relate to the topic of nuclear energy. The explanation of results may be omitted or, if present, be unrelated to the aims of the investigation, cursory or invalid. There is limited use of terminology. [6]

- (c) As a global issues case study, the candidate is required to use their knowledge/understanding to answer the question set. They will have evaluated evidence and formed opinions relating to the nuclear debate and whether or not the actual and potential problems associated with its use mean that nuclear energy should or should not be used. Thus, the candidate is asked to give an opinion on the statement and to provide a justification for this opinion. Candidates may choose to agree or disagree, provided their justification is valid. Some of the points they may choose to discuss include:

**Actual/potential problems militating against Nuclear Energy as a solution**

- Controversial economics - expense of initial building; decommissioning environmentally and economically expensive; political implications
- Environmental and health risks
- Long term radioactivity of waste products; trading issues related to nuclear waste
- Threat of nuclear terrorism
- Possibility of human error in handling equipment potential catastrophic outcomes

**Ways in which Nuclear Energy may provide a solution**

- High and continuous power output which may be used to close the energy gap
- Low emissions of greenhouse gases and other pollutants
- Small amounts of waste products
- Lower running costs than fossil fuel plants

Comments relating to places should be present, both British Isles and at least one other.

**Level 3 ([14]–[20])**

At this level, the candidate has provided a detailed answer. Each element of the question is addressed (opinion regarding statement, justification, varying scales). A clear opinion is given regarding the statement; the candidate is able to evaluate the statement and to make a reasoned judgement as to where they stand in relation to it. The justification provided is well-developed, detailed and valid; this would require detail specific to their study of the issue. The places aspect of the question is explicitly addressed. The answer is well written, using appropriate terminology and displaying very good written communication skills.

**Level 2 ([7]–[13])**

An answer at this level is a competent one, although the depth/detail provided may be constrained. For example, the candidate may not have provided adequate supporting evidence in their justification. However, each element of the question is addressed (opinion regarding statement, justification, places) although, perhaps, in an unbalanced or unstructured manner. Although an opinion is given regarding the statement, it may lack clarity. Although the justification provided is valid, it may be under-developed or restricted in detail. The answer is generally competently written, although the use of terminology may be restricted.

**Level 1 ([1]–[6])**

At this level, the answer is seriously flawed either in accuracy, depth and/or detail. One or more elements of the question (opinion, justification, places) may be neglected. Comments may be invalid, cursory, non-relevant or indicative of a lack of understanding. Use of terminology may be poor and/or written English may be flawed. [20]

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9 (a) **Agribusiness:** refers to the industrialisation of farming. Often there is some connection with a large corporation. Farms are very large, modern, highly mechanized, employ modern farming methods and often concerned with the production of one product only. The benefits range from increased productivity, increased variety of food produce, lower food prices and new job opportunities. They have to give a brief discussion of one beneficial impact of agribusiness. For 4 marks we do not require a lot of detail. They will have studied examples of this in their regional case study of agriculture change and this might be the best way to tackle this question.

- For full marks the candidate should give reasonable details.
- An answer that is nothing more than generalisations should not be awarded more than 2 marks.

[4]

(b) The aim of the investigation should be clearly stated. The aims must relate to agricultural change. The conclusions reached should be explained in relation to the original aims.

**Level 3 ([5]–[6])**

The aims are described fully and are related to agricultural change. The conclusions are explained in relation to the aims of the investigation. Appropriate terminology is used and the candidate shows sound understanding of the topic.

**Level 2 ([3]–[4])**

At this level the answer still has merit but it lacks the required depth and detail. Alternatively, the conclusions are inadequately explained within the context of the aims of the investigation. There may be inadequacies in terminology.

**Level 1 ([1]–[2])**

The aims are not described accurately and/or the explanation is missing or is not properly related to the aims of the investigation. There is limited use of terminology.

[6]

(c) This is their chosen global issues case study. They need to use their material to answer the question set. Do not over reward a candidate who does not follow the exact requirements of the question. They will have studied agricultural change within a regional setting. They will need to outline the nature of agricultural change within their chosen region and evaluate the attempts to manage any potential negative environmental outcomes. The details will be determined by their case study but we need to see at least two management issues in some detail to get beyond a level 2 mark.

- If the answer is not focused on managing potential negative consequences confine to level 1
- If there is only one management issue, award level 2 maximum.
- If there is no evaluation, award level 2 maximum.

**Level 3 ([14]–[20])**

At this level the candidate has provided a detailed answer. The nature of agricultural change within their chosen region is described in detail with facts and figures. The measures employed to manage the possible negative environmental consequences of agricultural change are detailed revealing sound understanding. The candidate is able to evaluate these measures and make a judgement on their effectiveness. This would require detail specific to their case study. The answer is well written using appropriate terminology and showing very good written communication skills.

**Level 2 ([7]–[13])**

Apart from the situation described above, an answer at this level is still a competent answer but the level of depth is less than above. Alternatively, the candidate may not have presented adequate supportive evidence in the evaluation section. Nevertheless, there is still adequate supportive evidence shown and the main difference between a level 2 and a level 3 answer is the depth and detail used. Quality of language is good.

**Level 1 ([1]–[6])**

At this level the answer is seriously flawed either in accuracy, depth and/or detail. The candidate is not in control of the topic. The answer is short showing only partial understanding of knowledge. Written English may be flawed. [20]

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10 (a) Pleasure periphery refers to the ever increasing range and destination choices made by tourists. Possible reasons for this might include – a desire for adventure, curiosity about such a unique environment, technological developments and effective advertising. All of these factors have enabled tourists to travel greater distances. Tourists are prepared to travel further and they are more aware of more distant locations. Tourists can plan tailor made holidays on the internet etc. One of the more recent tourist attractions involves trips to Antarctica. We are not looking for long answers here. They simply need to explain the concept. There is no requirement for actual examples but that would make the task easier. [4]

(b) One conclusion should be clearly stated, with reference to the candidate's understanding of the topic. This question does not restrict candidates to their primary data collection so material based on secondary study can be accepted.

**Level 3 ([5]–[6])**

One conclusion is outlined clearly and then discussed fully in relation to tourism and its management. The conclusions are explained in relation to the aims of the investigation. Appropriate terminology is used and the candidate shows sound understanding of the topic.

**Level 2 ([3]–[4])**

At this level the answer still has merit but it lacks the required depth and detail. Alternatively, the conclusion is the basis of only modest explanation/ understanding. There may be inadequacies in terminology.

**Level 1 ([1]–[2])**

The conclusion is unclear and/or the explanation/understanding is missing or inadequate. There is limited use of terminology. [6]

(c) This is their chosen global issues case study. They need to use their material to answer the question set. Do not over reward a candidate who does not follow the exact requirements of the question. They will need to discuss ecotourism and explain its role in tourism management. They will need to discuss the advantages and disadvantages of ecotourism as a means of sustainable management. Some of the points they might discuss include – the increased money that comes to a region as result of any form of tourism development, the increase in demand for locally produced goods, the potential for jobs etc for local people and all of this set in framework of environmentally sensitive developments. On the other side any form of tourism inevitably changes a region and there is always a risk of damage to sensitive environments. There are also issues relating to leakage of tourist revenue out of the region and the threat of forced removal of tribal groups from their traditional homelands. There is not a definitive list of issues that they have to discuss but they must demonstrate an understanding of both sides of the argument before finally deciding on the extent to which they agree with the statement in the question. They will need reference to actual examples of places to support their answer – if not, award level 1 minimum.

**Level 3 ([14]–[20])**

At this level the candidate has provided a balanced answer. The issues surrounding ecotourism are discussed competently. The candidate has facts and examples and these are used to good effect. The opposing issues are discussed thoroughly before a final decision is made regarding the statement given. The answer is well written using appropriate terminology and showing very good written communication skills.

**Level 2 ([7]–[13])**

This is still a competent answer addressing all aspects of the question but the level of depth and detail is less than above. There may be fewer examples or the candidate may not have demonstrated adequate balance in reaching a decision on the statement. Nevertheless, there is still adequate understanding shown and the main difference between a level 2 and a level 3 answer is the depth and detail used. Quality of language is good.

**Level 1 ([1]–[6])**

At this level the answer is seriously flawed either in accuracy, depth and/or detail. The candidate is not in control of the topic. The answer is short showing only partial understanding of knowledge. Written English may be flawed. [20]

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<b>Section B</b>	<b>30</b>
<b>Total</b>	<b>90</b>





**ADVANCED**  
**General Certificate of Education**  
**2010**

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## **Geography**

**Assessment Unit A2 2**

*assessing*

**Physical Geography and Decision Making**

**[AG221]**

**TUESDAY 25 MAY, AFTERNOON**

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# **MARK SCHEME**

## 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 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.

## Introductory Remarks

The assessment objectives (AOs) for this specification are listed below. Students must:

- AO1 demonstrate knowledge and understanding of the content, concepts and processes;
- AO2 analyse, interpret and evaluate geographical information, issues and viewpoints and apply understanding in unfamiliar contexts;
- AO3 select and use a variety of methods, skills and techniques (including the use of new technologies) to investigate questions and issues, reach conclusions and communicate findings.

**General Descriptions for Marking Criteria**

<b>Knowledge and Understanding</b>	<b>Skills</b>	<b>Quality of Written Communication</b>	<b>Level</b>
<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, punctuation and grammar.</p>	<p>3</p>
<p>The candidate will display an accurate to good knowledge and understanding of many of the relevant concepts/ ideas. Much of the body of knowledge that can be expected is given.</p>	<p>The candidate will display evidence of the ability to analyse and interpret the Resource material but gaps, errors 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, punctuation and grammar. Legibility is satisfactory.</p>	<p>2</p>
<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 or misapprehensions may 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, punctuation and grammar. Writing may be illegible in places.</p>	<p>1</p>

**Section A**

**Unit A: Fluvial and Coastal Environments**

- 1 (a) Award [1] for appropriate reference to places.  
 An appropriate discussion of the reasons why domestic/residential demands upon coastal areas is increasing should be given. A range of reasons is acceptable such as increasing number of apartment developments along coastline with associated requirement for utility provision. If only one reason is given and/or reference to the increase of the demand is omitted, award maximum [2]. Maximum [2] if just a list. [5]
- (b) (i) Award [1] mark for identification of Longshore Drift. An explanation of this process without locational context may be awarded a maximum of [2] marks.  
 An appropriate explanation of Longshore Drift with relevance to this location may be awarded maximum [3]. [4]
- (ii) A clear opinion should be given, although candidates may elect either to support or to disagree with the implementation of hard engineering in this location. Whichever option is taken, a reasoned and Resource-supported justification is required.

**Level 3 ([5]-[6])**

The opinion of the candidate in regard to the implementation of hard engineering strategies in this location is provided with clarity. A reasoned justification is given, which is strongly supported by information gleaned from the Resource.

**Level 2 ([3]-[4])**

The opinion of the candidate in regard to the implementation of hard engineering strategies in this location may be implicit rather than explicit. Some justification is given, with some, albeit restricted, support from Resource-based information.

**Level 1 ([1]-[2])**

The candidate does not make their opinion in regard to the implementation of hard engineering strategies in this location clear. Although some justification is given, it may not be supported by information gleaned from the Resource, or it may lack validity or clarity. [6]

- (c) The candidate is asked to outline the aims of a relevant and valid case study, and both to describe and evaluate the strategies used to achieve these aims.

**Level 3 ([11]-[15])**

The answer refers to a relevant case study example of an appropriate scale. The aims of the scheme are clearly outlined. A range of strategies used to achieve these aims are clearly described and strongly evaluated (either discreetly or generically). Appropriate details are given.

**Level 2 ([6]-[10])**

The answer refers to a relevant case study example of an appropriate scale. The aims of the scheme are outlined. Some strategies used to achieve these aims are described and some evaluation is presented (either discreetly or generically). Case study detail is restricted.

**Level 1 ([1]-[5])**

The answer may refer to a case study of an inappropriate scale or nature. One or more elements of the question (aims/description/evaluation) may be neglected or only one strategy described. Case study detail may be very restricted.

[15]

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- 2 (a) Award [1] for appropriate reference to places. An appropriate discussion of the reasons why the demands of leisure activities upon rivers and their valley zones is increasing should be given. A range of reasons is acceptable. If only one reason is given and/or reference to the increase of the demand is omitted, award maximum [2]. Maximum [2] if just a list. [5]
- (b) (i) If only one reason is presented, or if reference to the Resources is neglected, a maximum of [2] marks may be awarded. Valid reasons outlined with reference to the Resources may be awarded a maximum of [4]. [4]
- (ii) A clear opinion should be given, although candidates may elect either to support or to disagree with the notion that the proposals are environmentally sensitive. Whichever option is taken, a reasoned and Resource-supported justification is required.

**Level 3 ([5]-[6])**

The opinion of the candidate in regard to the environmental sensitivity of the proposals is provided with clarity. A reasoned justification is given, which is strongly supported by information gleaned from the Resources.

**Level 2 ([3]-[4])**

The opinion of the candidate in regard to the environmental sensitivity of the proposals may be implicit rather than explicit. Some justification is given, with some, albeit restricted, support from Resource-based information.

**Level 1 ([1]-[2])**

The candidate does not make their opinion in regard to environmental sensitivity of the proposals clear. Alternatively, no justification is presented, or no Resource-based evidence utilised. [6]

- (c) The candidate is asked to describe the hard and soft engineering strategies employed in a valid case study location, and to evaluate their effectiveness.

**Level 3 ([11]-[15])**

The answer refers to a relevant case study example of an appropriate scale. Both hard and soft engineering strategies are clearly described. The effectiveness of these strategies is strongly evaluated (either discreetly or generically). Appropriate details are given.

**Level 2 ([6]-[10])**

The answer refers to a relevant case study example of an appropriate scale. Both hard and soft engineering strategies are clearly described although, perhaps, in an unbalanced fashion. Some evaluation of the effectiveness of these strategies is given (either discreetly or generically). Case study detail is restricted.

**Level 1 ([1]-[5])**

The answer may refer to a case study of an inappropriate scale or nature. One or more elements of the question (hard or soft engineering/evaluation) may be neglected or only one strategy described. Case study detail may be very restricted. [15]

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**Option B: The Nature and Sustainability of Tropical Ecosystems**

- 3 (a) Mark as [1] for accurate identification of the tropical biome, [3] for the description (maximum [2] if no figures are cited) and [3] for the explanation provided. If they misidentify the biome but give a description and explanation that relates to their chosen biome, maximum [4].

**A – Tropical Rain Forest (Tropical Forest)**

**Description:** Hot and wet through the year. Low annual temperature range 1-3°C with monthly averages of 25-29°C. Total annual rainfall over 1800mm, even 3000+mm, with heavy afternoon downpours, cloud cover and no significant dry period.

**Explanation:** Despite the annual migration of the Hadley Cell, this region lies beneath the ITCZ and its associated convection rainfall throughout the year. The rising limb of the Hadley Cell, where the surface trade winds meet, is a region of low pressure and convective uplift forming clouds and rainfall. The sun is high in the sky all year and day length is always close to 12 hours, helping maintain consistently high insolation levels and temperatures.

**B – Tropical Grassland**

**Description:** Wet/Dry tropics (monsoon). Temperatures over 22°C throughout the year. Summer maximum moderated by cloud cover associated with rainfall of the wet season. Between 600-1500mm of rainfall in the 5 to 9 month rainy summer season.

**Explanation:** The annual migration of the Hadley Cell brings the convective rains associated with the low pressure of the ITCZ. At the same time, the temperatures remain high as the sun passes overhead and days are long. In winter the sub-tropical high pressure (Horse latitude) belt dominates these regions bringing drought conditions under the subsiding air and trade winds.

**C – Tropical Desert**

**Description:** Hot, arid conditions. Summer monthly temperatures rise above 30°C with cooler, but still hot, conditions in the winter months. Rainfall is sporadic and highly variable: most is linked to summer convective rains or mists and fogs from adjacent sea regions. Annual temperature range is around 12-20°C.

**Explanation:** The region is dominated throughout the year by the poleward limb of the Hadley Cell. This is an area of subsiding air, forming surface high pressure. This suppresses the development of convection cloud and rainfall. At the surface, winds diverge, forming the trade winds. The annual shift of pressure belts allows some summer rainfall on the equatorial fringes of the desert though the high temperatures often ensure that little effective rainfall is received. [7]

- (b) The answer requires a diagram, a version of Gersmehl's nutrient cycle is most appropriate, along with a description of the stores and flows relevant to the tropical forest. In the stores the biomass would dominate with both litter and soil being minor nutrient stores. Inputs and outputs are both large as are the uni-directional cycling of fall-out, decomposition and uptake.

**Level 3 ([7]-[8])**

The diagram and text accurately describes the nature of the three nutrient stores and the flows, into, between and out of these.

**Level 2 ([4]-[6])**

Either the diagram or the written description is restricted in a significant way. Perhaps a store and/or some flows are omitted in the description.

**Level 1 ([1]-[3])**

An answer without a relevant diagram would be confined to this level. The answer may have a limited but relevant diagram but a description of a cursory or inaccurate nature. [8]

- (c) The focus of the answer should be attempts at sustainable development. A small-scale case study is required and both description and evaluation of the management should be provided.

**Level 3 ([11]-[15])**

The response accurately describes, with detail, and evaluates the sustainable development of a relevant case study.

**Level 2 ([6]-[10])**

The answer refers to a relevant case study at the appropriate scale. Development is described and evaluated, though the detail and detail of these is restricted.

**Level 1 ([1]-[5])**

The answer omits at least one key element of the question: case study; evaluation or sustainability. Alternatively, an answer that addresses all aspects but at a cursory level would be confined to this level. [15]

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- 4 (a) (i) The clearance of large areas of forest threatens habitats for endangered species, including orang-utans, clouded leopards and sun bears. Clearance increases the emission of greenhouse gases. Both aspects should be clearly referred to and linked to the pattern of increasing demand. Figures or data from the Resource should be used but simple copying of the text without comment would be confined to a maximum of [2]. [4]
- (ii) An opinion should be clearly expressed and supported from the Resource. The Resource material should be used to support the viewpoint and not just copied out. Such unprocessed use of the Resource or failure to use it at all would be confined to a maximum of [2]. [4]

- (b) **Depth:** 8m (30m). **Acidity:** Acid pH 4-4.3. **Colour:** Red to lighter red. **Structure:** blocky. **Fauna:** highly active. **Humus:** thin mat. **Chemistry:** iron/aluminium rich. **Texture:** clay rich. **Nutrient status:** limited. Climate links are to the year round high temperatures (c.28°C) and high rainfall totals (1800-3000mm). The low pH values and lack of topsoil and sub-soil (A and B horizon) nutrients are linked to the strong leaching action as precipitation exceeds evapo-transpiration. Nutrients are washed deep down into the sub-soil or out of the profile altogether. Leaching also helps account for the blocky structure of the B1 horizon and its clay-rich nature. The residual sesquioxides (Iron and Aluminium) give the soil its red colouration though leaching reduces this colour at depth (B-horizon). While the climate provides abundant growth and therefore a large litter input, the same hot, wet conditions accounts for the rapid decomposition and uptake of nutrients by the vegetation. Thus the top-soil Ah horizon is relatively thin. Bacteria and other decomposers are highly active as a consequence of the abundant heat and humidity.

**Level 3 ([6]-[7])**

At least three of the soil characteristics are accurately explained in the context of the zonal climate of the oxisol.

**Level 2 ([3]-[5])**

At least two of the soil characteristics are accurately explained in the context of the zonal climate of the oxisol. A range of characteristics may be discussed but the explanation is restricted.

**Level 1 ([1]-[2])**

The explanation is limited to one characteristic of the soil or the explanation is inaccurate or very restricted. [7]

- (c) A clear description of the causes of salinisation in a named study is required. The impacts should be not only described but discussed so an understanding of these impacts on the human and physical worlds should be developed. If the scale of the case study is incorrect, maximum level 2.

**Level 3 ([11]-[15])**

The answer provides a clear description of the causes of salinisation for a specified region. It also discusses in a balanced way with relevant detail the impact of the issue for both the environment and the society.

**Level 2 ([6]-[10])**

A relevant case study is provided but one element of the answer is poorly developed; perhaps the social or environmental impact.

**Level 1 ([1]-[5])**

No relevant regional study is named or detail provided though causes and impact may be discussed in general. Alternatively a relevant study is named but the description and discussion are cursory, lacking depth and detail. [15]

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**Option C: The Dynamic Earth**

- 5 (a) (i) **Description:** This should be more than simply the pattern that age of the sea-floor increases with distance from the centre. At least some figures should be provided, for full marks [2].  
**Explanation:** This should include the concept of sea-floor spreading, a central ocean constructive margin. The motive process and changes over time should be clear, with appropriate terminology used [3]. [5]
- (ii) Any **one** other piece of evidence is required, such as: parallel coastlines; fossil evidence; past glaciations; paleomagnetism; matching geology and/or mountain trends. Award [1] for stating a relevant type of evidence with the remaining marks (up to [3]) for a brief but clear discussion of the relevance of that evidence. [4]
- (b) Whichever one of the three landforms is selected, the explanation should involve a destructive plate margin. Processes of convection in the asthenosphere (upper mantle) resulting in the collision of plates at a destructive/convergent (or collision) margin. For each landform the relevance of the process should be clarified with appropriate terminology: the folding of marine sediments along the boundary for the creation of fold mountains; the subduction of thin but denser oceanic crust material to form ocean trenches and the re-cycling of crustal plate material in the Benioff zone, creating volcanoes that may form islands arcs lying parallel to the margin. Many candidates may use diagrams to illustrate the processes and landforms. The processes are the key element for explanation.
- Level 3 ([5]-[6])**  
The processes involved in the formation of the selected landform are explained with accuracy and detail. A high level of relevant terminology is expected.
- Level 2 ([3]-[4])**  
While the landform formation processes are accurately identified, the degree of detail and/or terminology used is limited.
- Level 1 ([1]-[2])**  
The answer lacks detail concerning the relevant formation processes. Poor or inaccurate terminology is used. [6]
- (c) The answer should focus on a clearly identified small-scale study where prediction of volcanic activity has taken place. The attempts to make the prediction are accurately described and the degree of success in the case studied is fully evaluated.
- Level 3 ([11]-[15])**  
The answer contains detail of the attempt to predict volcanic activity at an appropriate scale and also provides a full and valid evaluation of the prediction made in the case study.

**Level 2 ([6]-[10])**

A relevant case study is given, but the detail of either how the prediction was attempted or its evaluation may lack depth or development.

**Level 1 ([1]-[5])**

The answer may lack a relevant case study or an evaluation of the attempt at prediction. Alternatively, if both the description and evaluation are cursory in nature the response may be confined to this level. [15]

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- 6 (a) (i) Candidates do not have to differentiate between poor management and bad practice. Rather they are required to identify Resource material that illustrates these issues. A mere listing of the examples is inadequate as these should be linked to how they contributed to increasing the impact of the event. Examples include: the ignoring of several warnings about the location, timing and scale of the earthquake; the failure to organize and train local and disaster response teams; the inadequate construction of buildings, schools in particular and the suggestion that the passage of the Olympic torch was given priority.

**Level 3 ([5]-[6])**

The response accurately cites several of the issues and links them to the scale of the event.

**Level 2 ([3]-[4])**

Some sound use is made of the Resource but the links to the scale of the event may be limited.

**Level 1 ([1]-[2])**

Limited use is made of the Resource and the answer may not make the link between the issues and the scale of event. [6]

- (ii) Both material from the Resource and additional material are required. Both of these should address the limitations associated with earthquake prediction. From the Resource both the early and later predictions appear to have been accurate in predicting the scale of the earthquake (above 6.7 or 7 on the Richter Scale). In terms of timing the first was within the Calendar year 2008, the second within a twenty day period. Finally, the location in both cases was along the 1000km long Sichuan-Tibet fault. It could be argued that a 7.9 is considerably more powerful than a 6.7, that the prediction to within one year is unlikely to help and that a 1000km stretch of fault covers a very large region. It is expected that candidates will consider timing, scale and location issues with earthquake prediction as well as the risks of an inaccurate prediction for evacuation of people.

**Level 3 ([7]-[9])**

Good use is made of the Resource material and other relevant issues are identified and described.

**Level 2 ([4]-[6])**

The Resource and additional material are used but the description of limitations on management is restricted.

**Level 1 ([1]-[3])**

The response may lack use of the Resource or is based solely on it. Alternatively both the use of the Resource and additional material may be very limited. [9]

- (b) One small scale case study of the management of earthquake activity is identified and, throughout, relevant detail of the study is used. All three required aspects of case study are discussed and linked to the earthquake management with accuracy.

**Level 3 ([11]-[15])**

An appropriate study is identified and accurate detail of its management in relation of knowledge, perception and stage of development is discussed.

**Level 2 ([6]-[10])**

An appropriate study is identified and detail of its management is discussed. One of the three required aspects may be overlooked or two or more poorly developed.

**Level 1 ([1]-[5])**

The lack of an appropriate case study would confine an answer to this level. Alternatively, an answer with a relevant study may lack the discussion of the three aspects required. [15]

**Section A**

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## Section B

### Introduction: some guiding principles

- 7 The ideas outlined in the 'Guidance on Content' section are lines of thought that candidates might take in their report. They are not to be seen as the definitive answer, though it is to be expected that the points outlined below will feature, if only in part, in most answers. When allocating marks look favourably on answers which:
- (a) avoid undue verbatim quoting from Resource Booklet and adopt a consistent style;
  - (b) use the full range of the Resource material appropriate to the task – particularly where it is provided in non-literary format such as the OS map, printed maps and photographs;
  - (c) apply knowledge and concepts that are not specifically raised in the Resource material, yet are both illuminating and relevant to the task;
  - (d) Maximise opportunities presented by the Resource material;
  - (e) appreciate that “bias” might exist in Resource material which expresses particular views;
  - (f) avoid undue repetition of the same answer material in different sections or, if overlap is unavoidable, present it in a fresh way;
  - (g) back up points with specific detail, e.g. giving statistical information where it is provided rather than making vague statements when details are readily available.

### Guidance on content

- (a) **Introduction** (Discuss the need for the proposed road in the region and briefly describe the proposed development)

This road is needed as, at present, there is heavy congestion in roads in and around the city of Aberdeen. This city in North East Scotland is at the centre of a number of radiating roads including two major trunk roads, the A90 and A96. Traffic travelling across the city from North to South is slowed up considerably by congestion with a knock-on impact slowing public transport in the area and damaging the environment. This is not just an inconvenience for the local city residents but also more widely in the region. The north and west of Scotland relies on the A90 as the main route in the whole region. The existing roads will not be able to cope if traffic flows increase as they are anticipated to do. The new road is needed to improve the efficiency of local and regional transport and, in turn, sustain local and regional employment.

The AWPR is a major element of the Modern Transport System (MTS) which has been developed to improve travel in the area. The route of the proposed road is made up of three sections:

- Northern Leg (Blackdog to North Kingswells)
- Southern Leg (North Kingswells to Cleanhill)
- Fastlink (Cleanhill to Stonehaven)

The AWPR is proposed as a dual two lane carriageway with junctions which allow the traffic to join the road without disrupting travel flow along the road itself through what are called 'grade separated junctions'. After a number of possibilities had been considered, the route of the proposed dual carriageway road was decided on in 2005. The estimated cost of the AWPR is between £295 million and £395 million.

### Level 3 ([7]-[8])

The candidate clearly describes the proposed development and identifies the needs for such a development in a regional context effectively. Both elements are included and the needs considered are consistently regional.

### Level 2 ([4]-[6])

The candidate makes fewer clear and correct points. There is little or no development of any point, but points made are valid. There may be an imbalance between the discussion of the need and the description of the project.

### Level 1 ([1]-[3])

The candidate presents little content and a lot of it is irrelevant to the need for the development or the description of it. Some of the points made may lack validity.

Maximum [4] if only 'needs' or 'description' is present. [8]

**(b) (i) The likely impact on the people and the economy (the possible beneficial effects on the people and the economy and the counterarguments)**

The building of the AWPR will bring many benefits to the people and the economy of the area. Building this road will improve how efficient transport is in and around Aberdeen. Many of the small country roads, which are now clogged by commuters trying to find ways around the congestion, will see their traffic situation improve. Resource 7D shows some roads reducing traffic flows by 92%. In addition, the AWPR will link other facilities such as Park & Ride schemes, and also to freight depots for trucks. Aberdeen Airport will become easier to reach and it will also help rail travellers, pedestrians and cyclists. All of this helps to produce a more integrated transport system in the local area. The impact of these improvements on the local economy will be considerable. Improved communications means that the workforce will more easily be able to access the places of work. This will make for a more efficient workforce and increased employment opportunities in the local area. Improved communications and the reduction of congestion will make the area more attractive to incoming companies and existing companies are more likely

to stay and to expand. Improved transport links will also open up areas at the edge of Aberdeen to development. These places could not have been developed earlier as they would have been unattractive to industries before.

While the increased mobility around Aberdeen could allow housing areas and businesses to be built all around the city, this could encourage excessive car travel in the local area, producing more congestion. Any proposed developments will be carefully planned to make sure that this will not happen. There will be encouragement for alternatives to car travel to be used in order to reduce the rate of growth of car travel and eventually to lessen the number of cars on the road.

The new road will also reduce the number of accidents in the locality. It is estimated that accidents will be reduced by 60 or 70 each year by 2027, obviously to the benefit of local people.

While the cost of the AWPR is estimated to be up to £395 million, the project will actually produce five times as many benefits compared to the costs. This is a very high benefit-to-cost ratio. In any case, only the northern and southern legs of the AWPR will be funded by local people through their councils, and by less than one fifth of the cost. The remainder of the money comes from the Scottish government and maintenance of the road will have no cost to local people.

There will be some impact on local farms by the building of the scheme but, where farms have been cut by the road, the developer will ensure that the disconnected parts of the farms are reconnected by the provision of bridges or underpasses, allowing the farmers to continue to access their fields.

The economy of the whole region of North East Scotland will be boosted by more than £4.25 billion with additional employment of over 3000 by 5 years after the development is built. Scotland as a whole will also gain employment; it is likely that some of this regional and national benefit will benefit the local area.

There are a series of counterarguments to the view that the development will benefit local people and the economy. The AWPR will encourage an increase in the use of cars and bring people more dependent on them. This will have an impact on levels of pollution. The developers themselves acknowledge that, by 2026, there will be an increase by 9% on carbon dioxide emissions as a result of the development and that emissions will contribute to a national increase. This will impact on climate change, and this will affect people further afield. However, it will also have a direct effect on the health of local people, by adding to the incidence of heart and lung diseases for example.

It is also a difficulty as it favours those in society who have access to cars and makes things very difficult for those who cannot afford a private vehicle. The poor and the elderly in the local area will find shops much harder to reach as they close in the city and move out to the shopping

centres that will spring up on the periphery of Aberdeen. Workplaces may also move away from existing areas making that a problem for workers who do not currently own cars.

This is not a sustainable development for the locality or for the whole of Scotland. The investment should be in developing other transport links in order to reduce pollution to the benefit of local people's health.

It is claimed that the road will boost the income of the area. However, there has been no research into the impact of this four-lane motorway-style road on tourism. Nor are we sure that it will reverse the decline of population this part of Scotland. The damage to the greenbelt with the loss of potential earnings for tourism is not compensated for by some notional increase in earnings that this development may bring.

There will also be damage to other parts of the economy from this development. As 600 hectares of land will be taken out of forestry and agriculture, this is bound to have a knock-on effect on employment. The developers accept that 77 farms will be significantly damaged and, another 6 would not be viable as farms after the road is built. This is likely to have a very negative impact on the local economy and on the people affected. As 70 hectares of forest would be lost in the development, it is likely that jobs in this sector would also be negatively affected. On a wider scale, four fifths of the cost of developing this scheme and the whole cost of maintaining the road once built will be borne by Scottish people as a whole, even though it may be of no direct benefit to them.

In addition, local people will be affected by noise and it is accepted that 1865 people will be annoyed by noise from the new development. The developers seem not to be suggesting ways in which this would be tackled.

All of this development is being put forward as if it will benefit local people and the local economy. In fact, any benefits of reducing traffic congestion that the scheme may provide, will be more than compensated for by the other road schemes planned in the area. The congestion will not be helped by this scheme.

### **Level 3 ([9]-[12])**

Candidate states clearly the main effects and the counterargument.

**Three** or more different factors should be discussed. The account will have many of these characteristics:

- The points made will be consistently relevant and logically structured
- The ideas will demonstrate insight and a level of sophistication
- Clear understanding of all concepts will be demonstrated
- Use will be made of most of the relevant Resource material
  - no significant points will be omitted
- Figures, where available and appropriate, will be used to good effect
- Ideas will be expressed clearly and effectively

**Level 2 ([5]-[8])**

Candidate will have fewer lines of thought or discussion may be limited. However, while ideas may lack depth and/or detail, they are still adequate. There may be a heavy imbalance between the two sides of the argument. The account may show deficiencies in the following ways:

- Understanding displayed, but an over-reliance on verbatim quoting in places, even though appropriate
- Resource material used, but some information not as well exploited as it could be
- Largely related to the question, but some irrelevant material introduced
- Ideas not expressed particularly logically or clearly

**Level 1 ([1]-[4])**

- Simple understanding demonstrated but sketchily dealt with
- Excessive verbatim use of Resources, sometimes not fully appropriately
- Some use made of the Resource material but many relevant Resources omitted
- Little or no structure or logic in the ordering of content [12]

**(b) (ii) The environment (the environmental impact of the proposed development and the counterarguments)**

The AWPR will have an enormous negative impact on the environment. As a large four-lane motorway-type road, being built in Aberdeen's Green Belt, it will inevitably cause damage. At a number of places along the route there are sensitive habitats, such as the River Dee which is a Special Area of Conservation. The policies of the government in terms of Nature Conservation should not allow such a development to take place. The impact on sensitive areas of flora and fauna will also impact on the environment for the people who use the area too.

Such a large road will inevitably bring with it other development pressures with industrial parks and out-of town shopping developments inevitably attracted to the area.

The land which has been set aside for the building of this road would be much better to continue in use as greenbelt land and the money could be used to enhance the environments there. The road will appear totally out of character within this sensitive landscape.

As the land which will be lost beneath this road will include 70 hectares of forest, this will have a negative effect on the environment. The Red Squirrel is likely to become extinct in two of the woodlands (Corsehill Wood and Littlejohn's Wood) and the developers concede that numbers of this protected species 'are likely to be killed on the road'. Even they accept that this is of major significance. In the wider area biodiversity will be reduced as the number of woodland species that the area can support will be reduced. The road is a barrier in the landscape, effectively cutting off Aberdeen from the surrounding countryside, further reducing biodiversity in the area.

Important wetlands are also set to be damaged by the development. These are already scarce in Aberdeenshire, so this is a particular problem. Some are supposedly protected such as Red Moss which is a Special Area of Conservation (SAC).

On the other hand, some argue that the environmental damage will not be so great. The route of the development itself has been carefully chosen to keep any environmental damage to a minimum. It is impossible to avoid damage altogether but care will be taken to reduce the impact. Indeed the historic city of Aberdeen is currently under pressure from the traffic flooding through it. The AWPR will alleviate this and help Aberdeen's historic granite buildings to survive. Resource 7D shows that the centre of Aberdeen can expect traffic flows to reduce by 10% by 2012. The opponents of the scheme say nothing about this.

The quality of water along the route could be affected by contaminants. However the developers will treat any water draining from the road in one of 19 sets of Sustainable Drainage System ponds. In addition the rivers and streams will be improved with culverts, underpasses or bridges to assist wildlife to move about the environment. As otters and badgers will want to cross from the land on one side of the road to the other, they can use these links. Around 15 hectares of land will be planted to create or replace habitats for wildlife.

### **Level 3 ([7]-[8])**

Candidate states clearly the main impact and the counterargument.

**Two** or more different factors should be discussed. The account will have many of these characteristics:

- The points made will be consistently relevant and logically structured
- The ideas will demonstrate insight and a level of sophistication
- Clear understanding of all concepts will be demonstrated
- Use will be made of most of the relevant Resource material
  - no significant points will be omitted
- Figures, where available and appropriate, will be used to good effect
- Ideas will be expressed clearly and effectively

### **Level 2 ([4]-[6])**

Candidate will have fewer lines of thought or discussion may be limited.

However, while ideas may lack depth and/or detail, they are still adequate.

There may be a heavy imbalance between the two sides of the argument.

The account may show deficiencies in the following ways:

- Understanding displayed but an over-reliance on verbatim quoting in places, even though appropriate
- Resource material used but some information not as well exploited as it could be
- Largely related to the question but some irrelevant material introduced
- Ideas not expressed particularly logically or clearly

**Level 1 ([1]-[3])**

- Simple understanding demonstrated but sketchily dealt with
- Excessive verbatim use of Resources, sometimes not fully appropriately
- Some use made of the Resource material but many relevant Resources omitted
- Little or no structure or logic in the ordering of content [8]

**(c) Decision (state clearly your decision and justify it on the basis of the greater overall benefits)**

The recommendation may overlap with some of the points made in B in relation to the potential economic and environmental impact of the AWPR. However, the emphasis here has to be on the *greater overall benefits* of one option over the other. In this section, for example, candidates can weigh up the relative merits of arguably increased economic growth and help for local people with arguable damage to the environment. *No mark for stating a decision alone without a justification.*

**Level 3 ([8]-[10])**

Candidate states clearly a decision. A range of reasons are provided in justification. The account will have many of the following:

- There is evidence that the arguments of both sides are being balanced, one against the other
- Links are made between diverse aspects of Resource material, not possible in B
- Points are consistently relevant and logically structured
- There is a clear grasp of the concepts used

**Level 2 ([4]-[7])**

There are fewer lines of thought or discussion, but what there is is relevant and correct or supportable in what is argued. There may be deficiencies such as:

- Too much verbatim quoting or overuse of quotations in full
- Important sections of Resource material not utilised
- Irrelevant material introduced
- Ideas not expressed particularly logically or clearly
- Understanding of concepts not always clearly demonstrated

**Level 1 ([1]-[3])**

- Few lines of thought and sketchy in detail
- Large gaps in the use of Resource material
- Little or no structure or logic in the ordering of the concepts [10]

**Format**

- Clear format headings **using the headings provided** throughout [1]
- Clear subheadings **using the subheadings provided** in Section B [1] [2]

**Role**

- Role adopted [1]
- Role maintained [1] [2]

**Graph**

Reference in report [1]

Appropriateness of the technique used [1]

Accuracy of the data presented [3]

Conventions (key, labelled axes, title) [3]

If the graph is drawn from Table 2 not Table 1, no marks for accuracy, but candidate can get the others [5]

[8]

50

**Section B**

**50**

**Total**

**110**



