# GCSE MARKING SCHEME

## SUMMER 2024

## GEOGRAPHY - UNIT 1
## 3110U10-1

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## About this marking scheme

The purpose of this marking scheme is to provide teachers, learners, and other interested parties, with an understanding of the assessment criteria used to assess this specific assessment.

This marking scheme reflects the criteria by which this assessment was marked in a live series and was finalised following detailed discussion at an examiners' conference. A team of qualified examiners were trained specifically in the application of this marking scheme. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners. It may not be possible, or appropriate, to capture every variation that a candidate may present in their responses within this marking scheme. However, during the training conference, examiners were guided in using their professional judgement to credit alternative valid responses as instructed by the document, and through reviewing exemplar responses.

Without the benefit of participation in the examiners' conference, teachers, learners and other users, may have different views on certain matters of detail or interpretation. Therefore, it is strongly recommended that this marking scheme is used alongside other guidance, such as published exemplar materials or Guidance for Teaching. This marking scheme is final and will not be changed, unless in the event that a clear error is identified, as it reflects the criteria used to assess candidate responses during the live series.

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**WJEC GCSE GEOGRAPHY – UNIT 1**

**SUMMER 2024 MARK SCHEME**

## Instructions for examiners of GCSE Geography when applying the marking scheme

### 1. Positive marking

It should be remembered that learners are writing under examination conditions and credit should be given for what the learner writes, rather than adopting the approach of penalising him/her for any omissions. It should be possible for a very good response to achieve full marks and a very poor one to achieve zero marks. Marks should not be deducted for a less than perfect answer if it satisfies the criteria of the mark scheme.

GCSE Geography marking schemes are presented in a common format as shown below:

This box contains the sub-question.

The columns to the right indicate the assessment objective(s) targeted by the question and mark tariff.

| 3 (a) (i) Describe the location of the island of Lefkada. | | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|---|
| Credit up to **two** valid statements based on map evidence.<br>Credit accurate use of compass points max 1.<br>Credit accurate use of scale line max 1. | In western Greece (1) In Ionian Sea (1) north of Cephalonia (1)<br>275km (+/-10) from Athens (1)<br>280km (+/-10) from Thesaloniki (1) | | | | 2 | | **2** |

This box contains the rationale i.e. it explains the principles that must be applied when marking each sub-question. The examiner must apply this rationale when applying the marking scheme to the response.

This box contains the candidates' expected responses for point-based marking. For some sub-questions, those with a closed question, this box will indicate the only response that is acceptable. For more open-ended sub-questions this box will illustrate a number of likely responses that are credit worthy. It may be that this list will be extended at the examiner's conference after actual scripts have been read. **For banded mark schemes this box contains indicative content.** For further details see below under Banded mark schemes Stage 2.

### 2. Tick marking

Low tariff questions should be marked using a points-based system. Each credit worthy response should be ticked in red pen. The number of ticks **must** equal the mark awarded for the sub-question. The mark scheme should be applied precisely using the expected outcomes box as a guide to the responses that are acceptable. Do **not** use crosses to indicate answers that are incorrect. If the candidate has not attempted the question then the examiner should enter a dash (-) or use the not attempted icon on E-marker.



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## 3. Banded mark schemes

Banded mark schemes are divided so that each band has a relevant descriptor. The descriptor for the band provides a description of the performance level for that band. Each band contains a range of marks. Examiners should first read and annotate, using the comment bank, a learner's answer to pick out the evidence that is being assessed in that question. **Do not use ticks** on the candidate's response. Once the annotation is complete, the mark scheme can be applied. This is done as a two-stage process.

### Stage 1 – Deciding on the band

When deciding on a band, the answer should be viewed holistically. Beginning at the lowest band, examiners should look at the learner's answer and check whether it matches the descriptor for that band. Examiners should look at the descriptor for that band and see if it matches the qualities shown in the learner's answer. If the descriptor at the lowest band is satisfied, examiners should move up to the next band and repeat this process for each band until the descriptor matches the answer.

If an answer covers different aspects of different bands within the mark scheme, a 'best fit' approach should be adopted to decide on the band and then the learner's response should be used to decide on the mark within the band. For instance, if a response is mainly in band 2 but with a limited amount of band 3 content, the answer would be placed in band 2, but the mark awarded would be close to the top of band 2 as a result of the band 3 content.

Examiners should not seek to mark candidates down as a result of small omissions in minor areas of an answer.

### Stage 2 – Deciding on the mark

Once the band has been decided, examiners can then assign a mark. During standardising (marking conference), detailed advice from the Principal Examiner on the qualities of each mark band will be given. Examiners will then receive examples of answers in each mark band that have been awarded a mark by the Principal Examiner. Examiners should mark the examples and compare their marks with those of the Principal Examiner.

When marking, examiners can use these examples to decide whether a learner's response is of a superior, inferior or comparable standard to the example. Examiners are reminded of the need to revisit the answer as they apply the mark scheme in order to confirm that the band and the mark allocated is appropriate to the response provided.

Indicative content is also provided for banded mark schemes. **Indicative content is not exhaustive**, and any other valid points must be credited. In order to reach the highest bands of the mark scheme a learner need not cover all of the points mentioned in the indicative content but must meet the requirements of the highest mark band. Where a response is not creditworthy, that is contains nothing of any significance to the mark scheme, or where no response has been provided, no marks should be awarded.



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## 4. Assessing Writing

The quality of writing is assessed through two separate strands:

(i) Communicating and organising
(ii) Writing accurately

**(i)** **Communicating and organising** is assessed in items that have a tariff of 6, 8 or 10. These responses should be viewed holistically when deciding on a mark band (see stage 1 above). The definitions below clarify what is meant by the terminology in these descriptors.

**Meaning**: to have clarity the text must be legible. The meaning of statements should be clear and not require re-reading to make sense.

**Purpose**: the response should take into account what is required by the question. For example, evaluation requires consideration of pros/cons or the justification of a decision may be assisted by arguments. A suitable tone is adopted for reporting on scientific investigation in Unit 3.

**Structure**: well-planned responses have an overall structure with use of paragraphs to indicate portions of the response such as introduction, main arguments and conclusion. Chains of reasoning provide a logical structure within paragraphs. Signposting links sections together and is used to assist the reader.

**(ii)** **Writing accurately** takes into account the candidate's use of specialist language. It also takes into account the accuracy of the candidate's spelling, punctuation and grammar. This assessment is restricted to specific items (one item in each unit). The descriptors for writing accurately are printed in the mark scheme for each relevant item. In applying these descriptors learners may only receive marks for responses that are in the context of the demands of the question; that is, where learners have made a genuine attempt to answer the question.

## 5. Marking Core and Options questions

**Core Themes** Mark **both** questions

**Options Themes** Learners are instructed to answer **one** question. If the candidate has responded to both questions then the examiner must mark both questions. Award the higher mark that has been attained.



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## SECTION A (Core Themes)

### Core Theme 1, Question 1

| (a) (i) Give the grid reference for the bus station in Pontypridd. Tick the correct answer from the box below. | | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|---|
| | | | | | 1 | | **1** |
| Award one mark for correct answer. | 0790 | | | | | | |

| (a) (ii) Estimate the size of Area A (woodland to the west of Pontypridd). Tick the correct answer from the box below. | | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|---|
| | | | | | 1 | | **1** |
| Award one mark for this answer only, however indicated. No marks if more than one box ticked. | $2km^2$ | | | | | | |

| (b) (i) Circle two factors from the box below that are most likely to lead to increased overland flow. | | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|---|
| | | 2 | | | | | **2** |
| Credit only these two responses.<br>Max 1 mark if three factors circled.<br>0 marks if four or more factors circled. | Steep slopes<br>Urban (built-up) area | | | | | | |

| (b) (ii) Describe one impact on people of a river flood that you have studied. | | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|---|
| | | 2 | | | | | **2** |
| Credit one mark for social impact and second mark for elaboration. Development points MUST relate to impact on people for any credit. (1 + 1)<br><br>Do not award two marks for separate impacts. Ensure that elaboration constitutes good geography and moves the answer forward. | Loss of/damage to home (1)<br>Loss of/damage to possessions (1)<br>Psychological/emotional impact (1)<br>Loss/damage to farmland (only if in context of impact on people/farmers) (1)<br>Damage to roads/infrastructure (only if in context of impact on people) (1)<br>Elaboration of any point OR<br>Specific flood event knowledge (1) | | | | | | |



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| (b) (iii) Use the hydrograph to describe how the river responded to Storm Dennis between 14th and 17th February. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | | 4 | | **4** |

| | |
|---|---|
| Credit one mark for each valid point (1) | Steep rising limb/rapid increase (1)<br>Steep recession limb/rapid decrease (1)<br>Increase to second peak after initial peak (1)<br>Recognition of time lag (1) Quantification of time lag (5-6 hrs) (1)<br>Quantification of peak flow (5.2-5.4m) (1) base flow (1.0-1.4m) (1)<br>Flashy (1) |

| (b) (iv) Analyse the factors that may have contributed to the flooding in Pontypridd during Storm Dennis. Use evidence from the resources on pages 4 and 5, and the OS map in the Resource Booklet. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | 6 | | | **6** |

Use the descriptors below, working upwards from the lowest band.

| **Band** | **Marks** | **Descriptor** |
|---|---|---|
| **3** | **5-6** | Detailed application of knowledge and understanding which analyses a range of factors provided as evidence. Map evidence is used effectively to support the points made. |
| **2** | **3-4** | Shows some ability to apply knowledge and understanding of factors contributing to flooding. A limited range of factors analysed which are not directly linked to evidence. The response has merit but lacks detail or depth. Some limited use made of evidence. |
| **1** | **1-2** | Simple statements with only cursory reference to evidence. |
| | **0** | Award 0 marks if the answer is incorrect or wholly irrelevant. |

Candidates are required to apply their knowledge and understanding of flooding to the scenario presented. Good analysis requires methodical examination of evidence presented in the question to interpret and explain the flooding.

Evidence from the map may be presented in terms of the confluence of two rivers and their valleys in the centre of Pontypridd and the steep slopes which surround the town in all directions leading to rapid surface run-off. Many of the valley sides lack vegetation which might slow down run-off. The urban area itself is likely to be affected by impermeable surfaces from concrete and tarmac.

Map evidence can be in the form of grid references, spot heights, reference to contours and names of places and features, including description of steep slopes/valley sides.

There is also a range of other evidence presented in the build-up to the question such as the intensity of rainfall, the prolonged wet period prior to Storm Dennis and the flashy nature of the hydrograph.

A band 3 answer need not refer to all of these factors but there should be a good range and there may be an attempt to evaluate, although this is not necessary but should be credited.



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| (c) (i) Suggest one type of graph that would be most appropriate to represent this data and explain why you think it would be suitable. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | | 2 | | **2** |

| | |
|---|---|
| Award one mark for acceptable graph and second mark for reasonable justification. Justification must relate to specific features of chosen graph. | Line graph (1) shows trend/change/fluctuation over time (1)<br>Bar graph (1) number of tourists is discrete (1)<br>Pictogram (1) visual (1) |

| (c) (ii) What is meant by the term 'honeypot site'? | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | 1 | | | | | **1** |

| | |
|---|---|
| Credit one mark for this answer, or similar. Reference to tourists must be qualified by 'many' | A place of special interest that attracts **many** tourists (1) often congested (1) |

| (c).(iii) Suggest how visitors are causing problems in this photograph. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | 3 | | | **3** |

Use the descriptors below, working upwards from the lowest band.

| Band | Marks | Descriptor |
|---|---|---|
| **2** | **2-3** | Elaborated statements which offer sophisticated inference from resource. Focus must clearly be on the area shown in the photo. |
| **1** | **1** | Simple inference of impact with limited or no elaboration or list of more than one impact. |
| | **0** | Award 0 marks if the answer is incorrect or wholly irrelevant. |

The question requires candidates to draw inference from the photograph to apply their knowledge and understanding of the impact of visitor pressure on a distinctive landscape like Bannau Brycheiniog.

Candidates may focus on the effect of large numbers of walkers on footpaths and note the footpath erosion or gullying that is clearly taking place. They should elaborate that the erosion is spoiling the aesthetic appeal of the landscape.

They may also go on to suggest that eroding the footpaths may encourage walkers to seek other routes, thus damaging other areas. They may also suggest that large numbers of people detract from the solitude and aesthetic appeal of the landscape.

The answer should clearly be based on one or more impacts which should be elaborated through a chain of reasoning.



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| (d) Explain why strategies to manage landscapes can cause disagreement between different users. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | 6 | | | | **6** |

Use the descriptors below, working upwards from the lowest band.

| Band | Marks | Descriptor |
|---|---|---|
| **3** | **5-6** | Thorough understanding and good explanation which shows some sophistication.<br><br>Meaning is clear. Response has purpose, is organised and well structured. |
| **2** | **3-4** | Some understanding of disagreement between users. Response may lack depth and detail and only have partial explanation.<br><br>Meaning is generally clear. The response is structured. |
| **1** | **1-2** | Valid statements show limited understanding of conflict in landscapes.<br><br>Meaning may lack clarity in parts. Statements are linked by a basic structure. |
| | **0** | Award 0 marks if the answer is incorrect or wholly irrelevant. |

Strategies to protect landscapes must balance the needs and aspirations of the range of different users which may often conflict with each other. These users will include residents who live in the area, tourists and day visitors who require a range of activities, farmers, conservationists. All may have different views ranging from the economic benefits of tourism to the disturbance created by visitors. There is a range of ways in which candidates can tackle the answer, but they should make links and develop chains of reasoning to demonstrate how different strategies may impact in different ways on different users. For example, strategies to manage and limit traffic/car parking may be at odds with the requirements of walkers and those seeking remote areas for water sports or climbing, etc. Candidates should provide reasoned explanations drawing a range of supporting evidence. Two well-reasoned areas of stakeholder relationship should be sufficient for access to the top but credit breadth as well as depth in the answer.

Focus must be on users/stakeholders.

**End of Question 1**

| | 5 | 6 | 9 | 8 | | **28** |
|---|---|---|---|---|---|---|



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## Core Theme 2, Question 2

| (a) (i) Calculate the percentage increase in UK internet shopping sales from 2012 to 2021. Show your working. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | | 2 | | **2** |

| | |
|---|---|
| Credit only this answer for one mark.<br>Award second mark for working.<br>Award one mark for working if answer is incorrect if candidate demonstrates understanding of the concept. | 120 – 32 = 88/32 x 100 or (120/32 x 100) -100<br><br>= 275% |

| (a) (ii) Give two reasons for the growth in internet shopping. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | 4 | | | | **4** |

| | |
|---|---|
| Credit two statements with up to 2 marks for either awarded for elaboration.<br><br>(2 + 2 or 3+1). | Increasing technology (1) Smart phones (1)<br>Convenience (1) Comfort of own home (1) 24/7 (1) Easier to browse/compare suppliers (1)<br>Reviews online so buy online (1)<br>Greater choice (1) More online retailers (1)<br>Global shipping & quick delivery (1)<br>Often cheaper (1) More competition between suppliers (1) Deals and discounts (1)<br>Covid-19 Lockdown (1)<br>Range of payment methods (1)<br>Development of any point (max 2) |

| (a) (iii) Describe two impacts of increased internet shopping on UK high streets. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | 4 | | | | | **4** |

| | |
|---|---|
| Credit two statements with up to 2 marks for either awarded for elaboration.<br><br>(2 + 2 or 3+1). | Reduced turnovers / profits (1) shop closures (1) reduced footfall (1) filtering down (1) example (charity shops) (1) less choice on high street (1) forces strategy / innovation (1) to revive high streets (1) example (1) changing land use (1) example (residential/entertainment) (1) reverse multiplier (1)<br>Development of any point (max 2) |



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| (b) (i) Give the population of Tokyo. Tick the correct answer in the box below. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | | 1 | | **1** |

| | |
|---|---|
| Accept this answer only, however indicated. No mark for more than one answer given. | Greater than 30 million |

| (b) (ii) Compare the location of the top ten global cities with the top ten largest cities. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | | 3 | | **3** |

| | |
|---|---|
| Award one mark for each valid point. | Top 10 global cities not necessarily the largest (1) largest cities mainly in Asia (1) half of global cities in Europe and USA (1)<br>Quantification (1) Both types of city predominantly in NORTHERN hemisphere (not above equator) (1) |

| (b) (iii) Suggest how the map shows that Paris is a global city. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | 2 | | | **2** |

| | |
|---|---|
| Award one mark for each valid point/or development. | Transport hub (1) Many links with other countries (1) nearly all continents (1) development of any point (1) |

| (b) (iv) Give two other features common to global cities. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | 2 | | | | | **2** |

| | |
|---|---|
| Award one mark for each valid point.<br><br>Do not credit air transport (as this is given in (iii)) | Global attraction to tourists (1)<br>Cultural significance (1)<br>High / positive immigration (1)<br>Multi-cultural (1)<br>Financial / commercial hub (1)<br>TNC HQs (1)<br>National capital / political hub (1)<br>Major port / trading centre (1) |



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| (b) (v) Explain why the informal economy plays an important role in some cities in Low Income or Newly Industrialised countries (LICs or NICs). | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | 4 | | | | **4** |

Use the descriptors below, working upwards from the lowest band.

| Band | Marks | Descriptor |
|---|---|---|
| **2** | **3-4** | More sophisticated understanding with explanation demonstrating chains of reasoning. Clear and communicated well. Meaning is unambiguous. The response has purpose, is organised and well structured. |
| **1** | **1-2** | Simple statements communicated in a basic way with little linkage between points. Statements are linked by a basic structure. |
| | **0** | Award 0 marks if the answer is incorrect or wholly irrelevant. |

Candidates need to demonstrate their understanding of why some people in some cities rely on the informal economy.

At the simple level, this is usually due to poverty, a lack of jobs in the formal economy and a need to provide food and shelter for the family. Fewer skills or qualifications are required and there are opportunities for children to work.

At band 1, the answer is likely to list one or two simple reasons with little development or linkage between them. More sophisticated responses will demonstrate linkage between points or chains of reasoning. For example, Jobs in the formal sector may require qualifications or skills (office workers / engineers), many people don't have these skills as their education ceases at a young age, but jobs like shoe shining allow them to earn money and help keep their family free from complete poverty.

There are many ways in which candidates can access the higher band but look for these chains of reasoning which show deeper understanding and the ability to explain.



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| (b) (iv) Evaluate the challenges facing global cities. You may use the photos or other examples you have studied to support your answers. The accuracy of your writing will be assessed in your answer to this question. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | 6 | | 3 | **9** |

Use the descriptors below, working upwards from the lowest band.

| **Band** | **Marks** | **Descriptor** |
|---|---|---|
| **3** | **5-6** | Good evaluation of challenges showing clear ability to evaluate and present evidence to justify points made.<br><br>Meaning is clear. Response has purpose, is organised and well structured. |
| **2** | **3-4** | Some but limited evaluation of one or more challenges but may lack evidence and/or detail. Imbalanced between challenges and tends focus on narrow range.<br><br>Meaning is generally clear. The response is structured. |
| **1** | **1-2** | Valid statements lack depth/breadth and with minimal evaluation. Overly descriptive.<br><br>Meaning may lack clarity in parts. Statements are linked by a basic structure. |
| | **0** | Award 0 marks if the answer is incorrect or wholly irrelevant. |

Candidates should apply their knowledge and understanding of challenges facing global cities and aim to evaluate these against each other to identify and justify why they think some or more important than others. They should consider a range of challenges which could be confined to the resources, but they may consider others that go beyond the resources.

The challenges include over-crowding and the need to balance large scale immigration with available resources; the need to provide effective transport and communications systems; the challenge of providing housing to a growing population and the importance of managing environmental challenges such as air pollution and waste disposal. These are not exclusive, and a good candidate may refer to more or different challenges facing cities in the future.

Evaluation should identify the most serious challenges in comparison to each other and justify the reasons for this judgement, but some candidates may identify that the resources relate to both HIC and LIC cities and seek to evaluate the challenges in this context which is perfectly acceptable. Credit the quality of the evaluation rather than descriptive/factual content.

A good evaluation of the information in the resources is sufficient for the top band but credit also where a candidate introduces other issues not presented in the resource.



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After awarding a level and mark for the geographical response, apply the performance descriptors for writing accurately that follow. Having decided on a band, award a second mark (out of 3).

In applying these indicators, learners may only receive marks for responses that are in the context of the demands of the question; that is, where learners have made a genuine attempt to answer the question.

| Band | Marks | Performance descriptions |
|---|---|---|
| ***High*** | **3** | • Learners spell and punctuate with consistent accuracy.<br>• Learners use rules of grammar with effective control of meaning overall.<br>• Learners use a wide range of specialist terms as appropriate. |
| ***Intermediate*** | **2** | • Learners spell and punctuate with considerable accuracy.<br>• Learners use rules of grammar with general control of meaning overall.<br>• Learners use a good range of specialist terms as appropriate. |
| ***Threshold*** | **1** | • Learners spell and punctuate with reasonable accuracy.<br>• Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall.<br>• Learners use a limited range of specialist terms as appropriate. |
| | **0** | • The learner writes nothing.<br>• The learner's response does not relate to the question. The learner's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning. |

**End of Question 2**

| | | | | | | |
|---|---|---|---|---|---|---|
| | 6 | 8 | 8 | 6 | 3 | **31** |



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## Options Theme 3, Question 3

| (a) (i) Describe the relationship between the height of the smoke plume and the frequency of eruption. Use data from the table to support your answer. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | | 2 | | **2** |

| | |
|---|---|
| Award one mark for each valid point | Higher the plume in km, the lower the frequency (1) quantification (1) |

| (a) (ii) Explain why pyroclastic flows are a major hazard in highly explosive eruptions. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | 4 | | | | **4** |

Use the descriptors below, working upwards from the lowest band.

| Band | Marks | Descriptor |
|---|---|---|
| **2** | **3-4** | More sophisticated understanding with explanation demonstrating chains of reasoning. |
| **1** | **1-2** | Simple descriptive statements communicated in a basic way with little linkage between points. |
| | **0** | Award 0 marks if the answer is incorrect or wholly irrelevant. |

Pyroclastic flows are devastating, fast moving clouds of volcanic gases and tephra which surge down the flank of a stratovolcano at extremely high temperatures. They occur in high energy eruptions which have the power to eject plumes of material high in the atmosphere so that it cools and collapses down the side of the volcano.

They are major hazards due to the speed and heat with which they occur which makes them highly destructive. At band 1, the answer is likely to list one or two largely descriptive points as to why these are a hazard with little explanation as to how they are linked to high energy eruptions with little development or linkage between them. More sophisticated responses at band 2 will explain more fully why they are linked to highly explosive eruptions demonstrating linkage between points or chains of reasoning providing understanding through clear explanation.



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| (b) (i) Describe two strategies used to reduce the risks associated with volcanic eruptions. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | 4 | | | | | **4** |

| | |
|---|---|
| Award one mark for each strategy with max 1 mark for elaboration. | Exclusion zones (1)<br>Hazard mapping (1)<br>Gas monitoring/analysis (1)<br>Tiltmeters (1)<br>Diverting lava flows (1)<br>Satellite monitoring (1)<br>Seismic analysis (1)<br>Evacuation plan (1)<br>Thermal imaging (1)<br>Land use planning (1)<br>Development of any point (max 2)<br><br>For example, exclusion zone (1) people removed from most dangerous area (1) by authorities (1)<br>or<br>Tiltmeters (1) measure small changes in shape of volcano (1) which suggests magma rising (1) |

| (b) (ii) Give one reason why it is often more difficult to protect people from earthquakes than volcanic eruptions. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | 2 | | | | **2** |

| | |
|---|---|
| Award one mark for reason and a second mark for elaboration. | Less warning (1) because of sudden plate movement (1) development (1)<br>Difficult to predict where (1) development (1)<br>Engineering solutions are expensive (1) less accessible in LICs (1) development (1) |

| (c) (i) Use the map to circle the correct answer in the sentences below. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | | 4 | | **4** |

| | |
|---|---|
| Award one mark for each correct answer however indicated. No mark for any sentence where more than one answer indicated. | East<br>2000km<br>15° North<br>121° East |



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| (c) (ii) Social and economic factors are more important than physical factors in making the population of the Philippines vulnerable to tectonic hazards. To what extent do you agree with this statement? | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | 8 | | | **8** |

Use the descriptors below, working upwards from the lowest band.

| Band | Marks | Descriptor |
|---|---|---|
| **4** | **7-8** | Thorough and sophisticated evaluation of factors with reasoned conclusion which explains which are most important. Chains of reasoning enable objective analysis based on evidence in resource and own knowledge/ understanding.<br><br>Meaning is unambiguous. The response has clear purpose, is fluent and logically structured. |
| **3** | **5-6** | Good evaluation of several factors showing clear ability to evaluate and present evidence from the resource to justify points made. Answer is balanced between a range of factors considered. There may also be some attempt to conclude the answer with a judgement.<br><br>Meaning is clear. Response has purpose, is organised and well structured. |
| **2** | **3-4** | Some attempt to evaluate one or more factors in relation to each other but may lack evidence and/or objectivity. Imbalanced between factors if more than one is considered.<br><br>Meaning is generally clear. The response is structured. |
| **1** | **1-2** | Valid statements lack depth/breadth and with only limited evaluation.<br>Meaning may lack clarity in parts. Statements are linked by a basic structure. |
| | **0** | Award 0 marks if the answer is incorrect or wholly irrelevant. |

Candidates are presented with a range of factors in the resource which indicate that people in the Philippines are more vulnerable to the impact of tectonic hazards than those in other tectonic areas. These include the geology of the region with proximity to plate boundaries which means the area is frequently at risk of experiencing tectonic events. Also, the fact that the country is made up of islands makes it difficult to escape events and candidates could infer that location close to large oceans might make it vulnerable to tsunamis.

By way of evaluation, candidates may identify this as a crucial factor given that it is impossible to stop plate movement and all that can be done is to mitigate the risks through protection strategies. However, other regions like Japan and Europe experience tectonic activity but people tend to be less vulnerable.

The resource also describes socio-economic factors which mean that people are generally less wealthy and thus, less resilient to the impact of major events with poorly constructed buildings and weak infrastructure.

Some candidates may prefer to highlight poverty as the most significant factor and offer reasoned explanation why this is the most significant contributor to vulnerability and provide chains of reasoning to evidence this view. They might also refer to the high population and density in the north, where Mt Pinatubo is located which increases the vulnerability there. Some candidates my attempt to evaluate economic v social factors as additional line of argument.

There are several ways in which the answer can be tackled and there is no single route to the higher bands. Credit the quality of evaluation of one factor against another and the use of chains of reasoning to argue the point.

At the top band there must be some attempt to conclude the answer even though the conclusion that increased vulnerability results from no single factor but a combination of factors which operate together.

Credit candidates who go beyond the resource and add depth to their answer by using their own knowledge and understanding to develop their points.

**End of Question 3**

| | 4 | 6 | 8 | 6 | | **24** |
|---|---|---|---|---|---|---|



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## Options Theme 4, Question 4

| (a) (i) Describe the relationship between the extreme sea levels (ESL) and the return periods. Use data from the table to support your answer. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | | 2 | | **2** |

| | |
|---|---|
| Award one mark for each valid point | Higher the extreme sea level, the longer the return period (1) quantification (1) |

| (a) (ii) Explain why climate change may result in more extreme sea levels in the future. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | 4 | | | | **4** |

Use the descriptors below, working upwards from the lowest band.

| Band | Marks | Descriptor |
|---|---|---|
| **2** | **3-4** | More sophisticated understanding with explanation demonstrating chains of reasoning. |
| **1** | **1-2** | Simple statements communicated in a basic way with little linkage between points. |
| | **0** | Award 0 marks if the answer is incorrect or wholly irrelevant. |

Increased temperatures are leading to warming of oceans which generates more heat energy in the atmosphere as the air is warmed by the surface via the GHE. This is leading to increased frequency and intensity of storms which is likely to reduce the recurrence interval of higher extreme sea levels. Melting ice caps are also raising sea levels to create more frequent ESLs from more intense storm surges.

At band 1, the answer is likely to list one or two simple, largely descriptive points with little explanation as to how they are linked to extreme sea levels, with little development or linkage between them.

More sophisticated responses will demonstrate linkage between points or chains of reasoning providing understanding through clear explanation.



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| (b) (i) Describe one hard and one soft engineering strategy that can be used to reduce the risk of coastal flooding. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | 4 | | | | | **4** |

| | |
|---|---|
| Award one mark for each strategy max 1 mark awarded for elaboration.<br>Accept description of a specific example if not explicitly named from answers provided as long as clearly hard and / or soft engineering. | Hard: sea walls (1) flood gates (1) barrage (1) rip rap (1) gabion (1), groynes (1)<br>Soft: beach nourishment (1) sand dune stabilisation (1) managed retreat (1), mangroves (1)<br>Elaboration of any strategy (max 2)<br><br>For example: Sea walls (1) reflect wave energy (1) deflect waves from coastline (1)<br>Beach nourishment (1) builds up level of beach (1) by relocating / dredging sand (1) |

| (b) (ii) Give one reason why some UK coastlines are protected from coastal flooding whilst others are not. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | 2 | | | | **2** |

| | |
|---|---|
| Award one mark for reason and a second mark for worthwhile elaboration. | Cost-benefit (1) economic value of land (1) economic activity requiring protection (1) residential (1) industrial (1) tourism value (1) farmland (1) development (1) |

| (c) (i) Use the map to circle the correct answer in the sentences below. | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | | 4 | | **4** |

| | |
|---|---|
| Award one mark for each correct answer however indicated. No mark for any sentence where more than one answer indicated. | East<br>2000km<br>15° North,<br>121° East |



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| (c) (ii) Social and economic factors are more important than physical factors in making the population of the Philippines vulnerable to coastal flooding. To what extent do you agree with this statement? | AO1.1 | AO1.2 | AO2 | AO3 | Accuracy | **Total** |
|---|---|---|---|---|---|---|
| | | | 8 | | | **8** |

Use the descriptors below, working upwards from the lowest band.

| Band | Marks | Descriptor |
|---|---|---|
| **4** | **7-8** | Thorough and sophisticated evaluation of factors with reasoned conclusion which explains which are most significant. Chains of reasoning enable objective analysis based on evidence in resource and own knowledge/ understanding.<br><br>Meaning is unambiguous. The response has clear purpose, is fluent and logically structured. |
| **3** | **5-6** | Good evaluation of several factors showing clear ability to evaluate and present evidence from the resource to justify points made. Answer is balanced between a range of factors considered. There may also be some attempt to conclude the answer with a judgement.<br><br>Meaning is clear. Response has purpose, is organised and well structured. |
| **2** | **3-4** | Some attempt to evaluate one or more factors in relation to each other but may lack evidence and/or objectivity. Imbalanced between factors if more than one is considered.<br><br>Meaning is generally clear. The response is structured. |
| **1** | **1-2** | Valid statements lack depth/breadth and with only limited evaluation.<br><br>Meaning may lack clarity in parts. Statements are linked by a basic structure. |
| | **0** | Award 0 marks if the answer is incorrect or wholly irrelevant. |

Candidates are presented with a range of factors in the resource which indicate that people in the Philippines are more vulnerable to the impact of flooding than those in other coastal areas. These include the location of the country as many small islands with proximity to large expanses of ocean which means the area is frequently at risk of experiencing floods from frequent tropical storms. Also, the fact that the country is made up of islands makes it difficult to escape flood events.

By way of evaluation, candidates may identify this as a crucial factor given that it is impossible to stop storms and all that can be done is to mitigate the risks through protection strategies. Candidates may also refer to the increasing prevalence of storms resulting from climate change in the future.

The resource also describes socio-economic factors which mean that people are generally less wealthy and thus, less resilient to the impact of major events with poorly constructed buildings and weak infrastructure. Some candidates may prefer to highlight poverty as the most significant factor and offer reasoned explanation why this is the most significant contributor to vulnerability. They might also refer to the high population and density in the north which increases the vulnerability there.

Ultimately, low lying island states are vulnerable to the impact of climate change which may things worse in the future, regardless of any mitigation strategies that may be put in place. Some candidates my attempt to evaluate economic vs. social factors as additional line of argument.

There are several ways in which the answer can be tackled and there is no single route to the higher bands. Credit the quality of evaluation of one factor against another and the use of chains of reasoning to argue the point.

At the top band there should be some attempt to conclude the answer even though the conclusion that increased vulnerability results from no single factor but a combination of factors which operate together. Credit candidates who go beyond the resource and add depth to their answer by using their own knowledge and understanding to develop their points.

**End of Question 4**

| | 4 | 6 | 8 | 6 | | **24** |
|---|---|---|---|---|---|---|



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