# GCSE MARKING SCHEME

**AUTUMN 2020**

**GEOGRAPHY SPECIFICATION B**
**COMPONENT 1**
**C112U10-1**

**INTRODUCTION**

This marking scheme was used by WJEC for the 2020 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

**GCSE GEOGRAPHY B**
**COMPONENT 1**

**AUTUMN 2020 – 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 its mark tariff.

| 3 (a) (i) Describe the location of the island of Lefkada. | | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|---|
| Credit two simple statements based on map evidence. Credit accurate use of compass points max 1 Credit accurate use of scale line max 1 | In western Greece (1) In Ionian Sea (1) north of Cephalonia (1) 275km (+/-10) from Athens (1) 280km (+/-10) from Thessaloniki (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 examiners' 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. 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.

## 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 marks. Examiners should first read and annotate 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.

**Theme 1, Question 1**

| 1. (a) The pattern of how and where we shop in the UK is changing. Study Figure 1.1 The Proposed Scotch Corner Retail Park<br><br>(i) Suggest two reasons why this is a suitable site for a retail park. Use evidence from Fig 1.1 only. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
| | | | | | 2 | **2** |

| Award one mark for each correct answer. | On flat land (1)<br>Near A1 motorway junction 55 (1)<br>Main A66 road leads off it (1)<br>Access to large number of potential customers A1 has 31.8 million A66 9.5 million (1) |
|---|---|

| (a) (ii) Use Fig 1.2 to calculate the approximate area of the new retail park. The edge of the retail park is shown in red. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
| | | | | | 1 | **1** |

| Credit correct response only | | Tick (✓) |
|---|---|---|
| | 250 000 square metres | |
| | 200 000 square metres | |
| | 100 000 square metres | ✓ |

| (a) (iii) The Scotch Corner development is on a 'greenfield' site. Explain why developers often prefer greenfield sites to brownfield sites. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
| | | 4 | | | | **4** |

| Answers must offer some explanation.<br>Answers may offer:<br>2 elaborated statements (1+1)(1+1)<br>Or detailed elaboration (1+1+1)+1<br>(1+1+1+1) | Pleasant environment (1) so more attractive for workforce (1)<br>Land may be cheaper (1) than in city centres/brownfield sites where land values are higher (1)<br>May be space for expansion (1) as may be more greenfield space nearby (1) /brownfield sites often in crowded city areas(1)<br>Nothing to knock down (1) so cheaper construction costs (1) |
|---|---|

| (a) (iv) Complete the sentences that follow, using four words or phrases from the text box. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
| | 4 | | | | | **4** |
| Credit correct responses only. | Travel (1)<br>High value (1)<br>Catchment (1)<br>Threshold (1) | | | | | |

| (a) (v) Explain why out of town retail parks are attractive to shoppers. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
| | | 4 | | | | **4** |
| Answers must offer some explanation.<br>Answers may offer:<br>2 elaborated statements (1+1)(1+1)<br>Or detailed elaboration (1+1+1)+1<br>(1+1+1+1) | Indoor shopping (1) so not affected by weather (1)<br>Often free parking (1) so saves money (1)<br>Offers range of services such as cinemas and cafes (1) so can spend whole day there (1)<br>Broad range of shops (1) so can do all shopping in one location (1)<br>May have transport links (1) so easily accessible (1)<br>Less congested than town centres (1) so easier to get around (1)<br>Traffic free (1) so safer (1) families feel more comfortable in the environment (1) | | | | | |

| (b) (i) Figure 1.3 shows changing patterns of online shopping 2008-2018<br>Compare the changing pattern of online shopping of people aged 25-34 with that of people aged 65+. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
| | | | | | 3 | **3** |
| Credit one mark for each correct comparative statement.<br>Reward exemplification of any comparative statement for an additional mark.<br><br>Max 1 if no evidence of comparison.<br><br>Do not credit if age group is not clear. | 25-34 yr olds always higher than 64+ (1)<br>64+ yr olds shown a greater increase (1)<br>25-34 yr olds pattern fluctuates more than 65+ (1)<br>Both increasing (1) | | | | | |

| (b) (ii) Figure 1.4 Frequency of online shopping over a three-month period.<br><br>Give **two** reasons why a bar graph is an appropriate technique to represent this data. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | **Total** |
|---|---|---|---|---|---|---|
| | | | | | 2 | **2** |

| Credit two simple statements | Data is discrete.<br>Separate bars for each frequency. Visually clear.<br>Simple to draw.<br>Can show both age groups on one graph so easy to compare. |
|---|---|

| (b) (iii) Describe the economic and environmental impacts the growth of online shopping is having on town centres (CBDs) in the UK. | AO1 | AO2. | AO2. | AO3 | AO4 | **Total** |
|---|---|---|---|---|---|---|
| | 4 | | | | | **4** |

| Allow simple or elaborated statements.<br>Could be (1+1)(1+1) or (1+1+1)+1<br><br>Max 3 if both economic and environmental are not covered. | **Economic**<br>• Lower footfall (1) so less money (1) which increases unemployment (1)<br>• Decrease revenue (1) people will not impulse buy because no window shopping (1)<br>• If shops close (1) less money for council in rates and rents (1)<br>• People may choose to shop elsewhere if it declines (1), leading to a spiral of decline (1).<br><br>**Environmental**<br>• More vacant shops (1) so area becomes visually unattractive (1).<br>• Empty buildings may be vandalised (1)<br>• Councils may not spend on improving the environment (1)<br>• Less congestion on roads (1) and less air pollution (1) therefore may improve public health (1). |
|---|---|

| (c) Analyse the likely positive and negative impacts of honeypot sites on both local residents and leisure users. Use evidence from the photographs to support your answer. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | SPAG | Total |
|---|---|---|---|---|---|---|---|
| | | | | 8 | | 4 | **12** |

Use a banded mark scheme. Work upwards from the lowest band.

| Band | Mark | Band descriptor |
|---|---|---|
| 4 | 7-8 | Exceptional application of knowledge and understanding.<br>• Comprehensive chains of reasoning provide sophisticated analysis.<br>• Balanced and coherent appraisal draws together wider geographical understanding to analyse impacts.<br>• Reference to all four elements of the question |
| 3 | 5-6 | Thorough application of knowledge and understanding.<br>• Chains of reasoning provide elaborated analysis.<br>• Balanced appraisal draws together wider geographical understanding to analyse impacts.<br>• Reference to positive and negative impacts. |
| 2 | 3-4 | Sound application of knowledge and understanding.<br>• Some connections provide valid but limited analysis.<br>• Limited appraisal from wider geographical understanding to analyse impacts. |
| 1 | 1-2 | Some basic application of knowledge and understanding.<br>• Basic level of meaning ascribed to the information/issue.<br>• Limited and weak appraisal of impacts. |
| | 0 | Award zero marks if answer is incorrect or wholly irrelevant. |

This question requires candidates to synthesise links between different areas of knowledge and understanding and apply this understanding to analyse novel information that requires judgement. All elements of AO3 are targeted.

Responses should apply their knowledge and understanding and analyse the impacts on **both** local residents and leisure users.

**Local Residents**

**Positive**
- may have businesses in the area, so make money. E.g. B&B, tourists shops, equipment hire.
- sporting facilities may be available for locals to use.
- local infrastructure may be improved in order to support leisure users.
- may be jobs in the leisure industry.

**Negative**
- increased congestion/traffic/air pollution.
- may be difficult to carry out daily tasks such as shopping or school run.
- jobs may only be seasonal.
- possible increase in crime/litter/water pollution.
- Farmers' land may be damaged.
- may spoil the visual appearance of their home area.

**Leisure Users**

**Positive**
- can enjoy a greater range of activities.
- access to some of the best sites in the UK.
- positive health benefits of leisure.
- increased provision of facilities.

**Negative**
- difficulty in parking in popular areas.
- increased prices due to popularity.
- increased management and provision of facilities may spoil the natural environment.

After awarding a level and mark for the geographical response, apply the performance descriptors for spelling, punctuation and the accurate use of grammar (SPaG) and specialist terms that follow.

| Band | Marks | Performance descriptions |
|---|---|---|
| *High* | 4 | • 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* | 2-3 | • 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<br>• The learner's achievement in SPaG does not reach the<br>• threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning |

**End of Question 1**

## Theme 2: Changing Environments

| 2. (a) (i) Study Fig 2.1<br>Global circulation of the atmosphere.<br>Complete the diagram by adding the correct letters from the table to Fig 2.1 One has been done for you. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | **Total** |
|---|---|---|---|---|---|---|
| | 3 | | | | | **3** |
| Credit these responses only.<br>One mark for each correct response. | Centre     = C<br>Top Right   = D<br>Bottom Left  = B | | | | | |

| (a) (ii) What does the term latitude stand for? Tick the correct answer in the box. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | **Total** |
|---|---|---|---|---|---|---|
| | 1 | | | | | **1** |
| Credit this response only. | Distance north or south of the Equator (1) | | | | | |

| (b) Describe the main characteristics of temperature and rainfall in the hot semi-arid climate zone. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | **Total** |
|---|---|---|---|---|---|---|
| | 4 | | | | | **4** |
| Credit up to four simple valid statements.<br>Max 3 marks for either temperature **or** rainfall. | **Temperature**<br>• Very hot summers<br>• Warm mild winters<br>• Mean annual temperature of at least $18^{O}C$<br>• Temperatures typically $19^{o}C$-$27^{o}C$<br>• Small temperature range (of around $10^{o}C$)<br><br>**Rainfall**<br>• Summer short wet season<br>• Winter long dry season<br>• Less than 600 mm rain a year<br>• Rain often in form of thunderstorms<br>• No snow, always as rain | | | | | |

| (c) Fig 2.2 Weather (synoptic) map showing pressure systems over Europe.<br><br>(i) Use the information in Map 2.2 to match the correct letter from the map to the statements. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | **Total** |
|---|---|---|---|---|---|---|
| | | | | | 3 | **3** |

| Credit one mark each correct answer. | | | | | | |
|---|---|---|---|---|---|---|

| | **Letter** |
|---|---|
| The point with the highest air pressure. | X |
| A point in the warm sector. | V |
| The point with the lowest air pressure. | W |

| (c) (ii) Calculate the difference in air pressure between Point S and Point Z on Fig 2.2. Show your working in the space below. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | **Total** |
|---|---|---|---|---|---|---|
| | | | | | 2 | **2** |

| Credit one mark for the correct response.<br>Credit one mark for working.<br>Max 1 mark if no working is shown. | Point S = 996 mb<br>Point Z = 1024 mb<br><br>**Working**<br>1024 – 996<br><br>Answer = 28 millibars |
|---|---|

| (c) (iii) Give **one** reason to explain why there is likely to be heavy rain at Point S on Fig 2.2. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | **Total** |
|---|---|---|---|---|---|---|
| | | | 2 | | | **2** |

| Credit any valid statement with elaboration. | Cold air forces warm air to rise (1) and condenses/form clouds (1)<br>Warm air forced to rise rapidly (1)<br>Air cools (1) and condenses (1)<br>At the cold front (1) |
|---|---|

| (c) (iv) Periods of extended high pressure can lead to impacts on different groups of people. Explain why. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
| | | | 6 | | | 6 |

| Use a banded mark scheme. Work upwards from the lowest band. | Explanation can refer to either cause or effect. |
|---|---|

Use a banded mark scheme. Work upwards from the lowest band.

| Band | Mark | Band descriptor |
|---|---|---|
| 3 | 5-6 | A sophisticated response where the candidate shows a clear understanding of the link between high pressure and impacts through a chain of reasoning. Must refer to more than one group of people. |
| 2 | 3-4 | Elaboration in the response shows a clear understanding of the link between high pressure and impacts. |
| 1 | 1-2 | Valid but basic points are made with no elaboration. |
| | 0 | Award 0 marks if answer is incorrect or wholly irrelevant. |

Explanation can refer to either cause or effect.
- Farmers may lose money because of loss of crops.
- Prices may rise due to food shortages.
- Homeowners may have inconvenient restrictions on water use e.g. hosepipe bans, not allowed to wash cars, water cut off for periods of the day.
- Wildfires could affect property and smoke causes visual pollution and health issues.
- Water table drops so unsustainable for farmers who need to use water.
- Over abstraction can lead to further problems for people who rely on supplies.
- People may have to relocate.
- Lack of food can lead to malnutrition.

There may be references to named examples to illustrate key points.

| (d) (i) The table below contains four statements about Figure 2.3. Only two are correct.<br><br>Tick (✓) the two correct statements. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
|  |  |  |  |  | 2 | **2** |

| Credit one mark for each correct response. | | Tick (✓) two |
|---|---|---|
|  | Germany had a greater economic loss than the US |  |
|  | China had a greater loss than Thailand | ✓ |
|  | There was a lower economic loss between 1993 and 1999 than between 2000 and 2016 | ✓ |
|  | The most recent flood shown occurred in Germany |  |

| (d) (ii) Suggest **one** way in which Graph 2.3 could be improved. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
|  |  |  |  |  | 1 | **1** |

| Credit any valid statement. | Group data for the same country together (1)<br>Possibly change to chronological order (1)<br>Use graph paper grid (1)<br>Colour code countries (1) |
|---|---|

| | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
| (e) Study the information in Figure 2.4 Examples of soft and hard engineering solutions to river flooding.<br>"Soft engineering is a better river flood management strategy than hard engineering".<br>How far do you agree with this statement? You should consider both sides of the argument in your answer. | | | | | | |
| | | | | 8 | | 8 |

Use a banded mark scheme. Work upwards from the lowest band.

| Band | Mark | Band descriptor |
|---|---|---|
| 4 | 7-8 | Exceptional application of knowledge and understanding.<br>• Comprehensive chains of reasoning provide sophisticated analysis.<br>• Balanced and coherent appraisal draws together wider geographical understanding to justify decision. |
| 3 | 5-6 | Thorough application of knowledge and understanding.<br>• Chains of reasoning provide elaborated analysis.<br>• Appraisal draws together wider geographical understanding to support decision. May lack balance. |
| 2 | 3-4 | Sound application of knowledge and understanding.<br>• Some connections provide valid but limited analysis.<br>• Limited appraisal of wider geographical understanding. |
| 1 | 1-2 | Some basic application of knowledge and understanding.<br>• Basic level of meaning ascribed to the information/issue.<br>• Limited and weak appraisal uses some wider geographical understanding. |
| | 0 | Award zero marks if answer is incorrect or wholly irrelevant. |

This question requires candidates to synthesise links between different areas of knowledge and understanding and apply this understanding to analyse novel information that requires judgement. All elements of AO3 are targeted.

Responses should apply their knowledge and understanding of the differences between the two strategies and evaluate their relative importance before reaching a clearly stated decision. Responses should make reference to the resources, using them to support their argument.

The question can be answered through different approaches.

The student may agree/disagree/partially agree with the statement based on their reasoning. The answer should include a discussion of what is meant by 'better'.
Possible answers

**Soft Engineering**
• Could make reference to the low cost of strategies such as tree planting and restoring wetland (from resources) compared to the cost of building dams etc.
• Advantages of low maintenance.
• Encourages people to work with the natural environment, so is sustainable and eco-friendly with benefits to wildlife.
• More visually appealing.
• Not as reliable as floods may still occur, putting people and property at risk.
• Land use zoning not possible in areas that have already been developed.
• Strategy may be better suited to rural rather than urban areas.

**Hard Engineering**
• Likely to be a more permanent solution and possibly more reliable.
• Can be multi-functional e.g. dams can lead to HEP which could bring electricity to remote areas with positive increases in quality of life.
• Very expensive to build and maintain.
• Can lead to greater problems in other parts of the river.
• Can be visually unattractive.
• Not environmentally friendly.

Candidates may refer to named examples to illustrate key points.

**End of Question 2**

**Theme 3: Environmental Challenges**

| 3. (a) (i) What is meant by the term 'biome'? Tick **one** of the definitions. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
| | **1** | | | | | **1** |

| Credit this response only. | | Tick (✓) |
|---|---|---|
| | The part of the Earth that contains living things. | |
| | A plant and animal community covering a large part of the Earth's surface. | ✓ |
| | A small community of plants and animals and the environment they live in. | |

| (a) (ii) Complete the sentences that follow using **three** words from the text box. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
| | 3 | | | | | **3** |

| Credit one mark for each correct answer. | Plants (1) and decomposers (1) - in either order<br>Photosynthesis (1) |
|---|---|

| (a) (iii) Give one reason why there are more primary consumers than secondary consumers in a food web. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
| | | 2 | | | | **2** |

| Credit one elaborated statement (1+1) | More primary consumers as they are eaten by secondary consumers (1). Energy flows up in a food web (1)<br>Greater diversity of food for primary consumers (1) which makes the food web/supply sustainable (1)<br>Secondary consumers eat more than one primary consumer (1) |
|---|---|

| (a) (iv) Study Fig 3.1 Nutrient cycles in two major ecosystems. Identify **three** differences between the two nutrient cycles. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
| | | | | | 3 | **3** |

| Credit one mark for each correct difference. It must be clear which ecosystem they are referring to. | • Biomass bigger in TRF than grassland. <br> • Litter store greater in grassland than TRF. <br> • Soil store greater in grassland than TRF. <br> • More nutrients lost by leaching in TRF. <br> • Input of precipitation greater in TRF. |
|---|---|

| (b) Explain why human activities have negative impacts on hot semi-arid grasslands. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
| | | | 6 | | | **6** |

| Band | Marks | Descriptor |
|---|---|---|
| 3 | 5-6 | Thorough and elaborated understanding of a range of reasons. Depth of understanding is demonstrated through chains of reasoning of more than one human activity/impacts. |
| 2 | 3-4 | Elaborated understanding of some of the reasons. Demonstrates breadth of understanding. |
| 1 | 1-2 | Simple, valid statement(s) demonstrate basic understanding of the reasons. |
| | 0 | Award 0 marks if the answer is incorrect or wholly irrelevant. |

The response must refer only to **negative** impacts.

Responses likely to make reference to some of the following.

Increase in population leads to overgrazing so plants can't recover and increased risk of desertification.

Trees cut down for firewood so loss of habitats. Hunting and poaching for ivory and horns has led to endangered species such as rhino and elephants.

Introduction of commercial crops has meant loss of native species of plants and birds. Bunding/ditches reduces water supply for natural plant life.

Building new roads for access destroys plants. Global warming may decrease the grasslands at desert margins.

| (c) (i) Fig 3.2 shows biodiversity hot spots in the world. Complete the pie chart using the data in Fig 3.2 for % of world hot spots. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | **Total** |
|---|---|---|---|---|---|---|
| | | | | | 2 | **2** |

| Credit **one** mark for the correct insertion of line and **one** mark for correct shading.<br><br>Credit either order. | Line from centre to mark at 85% (1)<br>Correct shading of dots below line and horizontal line above line (1)<br><br>Or<br>Line from centre to 88% (1)<br>Shading of horizontal lines below line and dots above line (1) |
|---|---|

| (c) (ii) Give **one** reason why a line graph would not be an appropriate technique for the % of world hot spots data. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | **Total** |
|---|---|---|---|---|---|---|
| | | | | | 1 | **1** |

| Credit one mark for a correct statement. | Line graphs used for continuous data showing changes over time.<br><br>This is discrete data so a line graph is not suitable. |
|---|---|

| (c) (iii) Use the information in Fig 3.2 to calculate the percentage of vegetation remaining intact in North and Central America. Show your working. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | **Total** |
|---|---|---|---|---|---|---|
| | | | | | 2 | **2** |

| Credit this response only.<br>One mark for correct answer.<br>One mark for working process (must use correct total i.e. 542750) | Working process:<br>$\frac{90000}{542750}$  x 100<br><br>Answer = 16.58% (1) Accept 16.6 and 17 |
|---|---|

| (d) Describe how one **small scale** ecosystem you have studied in the UK benefits the local community. | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|
| | 4 | | | | | 4 |

Use a banded mark scheme.
Work upwards from the lowest band.

| Band | Mark | Band descriptor |
|---|---|---|
| 2 | 3-4 | Detailed description of a range of benefits for chosen ecosystem. The response is organised and well structured. |
| 1 | 1-2 | Limited attempt to describe benefits of an ecosystem but may be just simple statements. Statements are linked by a basic structure. |
| | 0 | Award 0 marks if answer is incorrect or wholly irrelevant. |

The key issue is that the response must be for a small scale ecosystem in the UK.
If a large scale ecosystem, such as Tropical Rainforest, or Hot semi-arid grassland etc, Award 0 marks.

Response will depend on choice of ecosystem. Could be urban such as a pond, or park, a green corridor.

Could be more rural such as a nature reserve, small area of woodland, heathland, wetland or coastal such as a rock pool.

Benefits could include the aesthetic value, opportunity for recreation, education possibilities, or health benefits.

| | | AO1 | AO2.1 | AO2.2 | AO3 | AO4 | Total |
|---|---|---|---|---|---|---|---|
| (e) Study Fig 3.3 which shows information about one marine ecosystem under threat – the Belize Barrier Reef. Evaluate the advantages and disadvantages of protecting vulnerable ecosystems such as the Belize Barrier Reef. You may use the resources above and/or examples you have studied to support your answer. | | | | | | | |
| | | | | | 8 | | 8 |

Use a banded mark scheme. Work upwards from the lowest band.

| Band | Mark | Band descriptor |
|---|---|---|
| 4 | 7-8 | Exceptional application of knowledge and understanding. Comprehensive chains of reasoning provide sophisticated evaluation. Balanced and coherent appraisal of both advantages and disadvantages. Draws together wider geographical understanding to justify the evaluation. |
| 3 | 5-6 | Thorough application of knowledge and understanding. Chains of reasoning provide elaborated evaluation. An appraisal draws together advantages and disadvantages but may not be balanced. Wider geographical understanding supports evaluation |
| 2 | 3-4 | Sound application of knowledge and understanding. Some connections provide valid but limited evaluation. Limited appraisal used wider geographical; understanding to support evaluation. |
| 1 | 1-2 | Some basic application of knowledge and understanding. Basic level of meaning ascribed to the information/issue. Limited and weak appraisal uses some wider geographical understanding to support ideas. May be generic points. |
| | 0 | Award zero marks if answer is incorrect or wholly irrelevant. |

There should be a clear attempt to **evaluate,** either in the form of a conclusion, or as statements made throughout the response.
Both advantages and disadvantages must be discussed in order to reach Levels 3 and 4
No credit for just quoting from the fact box.

This question requires candidates to synthesise links between different areas of knowledge and understanding and apply this understanding to analyse novel information that requires judgement. All elements of AO3 are targeted.

Responses should apply their knowledge and understanding to the issue of conservation and management of ecosystems They may make reference to other examples from ecosystems they have studied.
Details will depend on references to other ecosystems.

**Advantages**
- Environmental benefits of maintaining the biosphere.
- Long term survival of rare species.
- Enables scientific research to protect resources which may be of medical value in the future e.g. TRF
- Allows tourism to continue which brings in valuable revenue to areas that may have very few other resources.
- Fishing is maintained so livelihoods protected (from Fig 3.3)

**Disadvantages**
- Protected areas may reduce resources available for local people.
- Reduction in fishing quotas could lead to lost income.
- May deter visitors if access is limited with resulting loss of income from tourism.
- Hunting and fishing may increase in other areas, resulting in new endangered areas or biodiversity hot spots.

**End of Question 3**

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