OXFORD

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INTERNATIONAL AS
GEOGRAPHY
GG01A

Paper 1A Physical Geography 1 Hot Desert Systems and Landscapes

Mark scheme

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226XGG01A/MS

Mark schemes are prepared by the lead assessment writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same, correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this mark scheme are available from oxfordaqaexams.org.uk

International AS Geography mark scheme

How to mark

Aims

When you are marking your allocation of scripts your main aims should be to:

- recognise and identify the achievements of students
- place students in the appropriate mark band and in the appropriate part of that mark band (high, low, middle) for **each** Assessment Objective
- record your judgements with brief notes, annotations and comments that are relevant to the mark scheme and make it clear to other examiners how you have arrived at the numerical mark awarded for each Assessment Objective
- ensure comparability of assessment for all students, regardless of question or examiner.

Approach

It is important to be **open-minded** and **positive** when marking scripts.

The specification recognises the variety of experiences and knowledge that students will have. It encourages them to study geography in a way that is relevant to them. The questions have been designed to give them opportunities to discuss what they have found out about geography. It is important to assess the quality of **what the student offers**.

Do not mark scripts based on the answer **you** would have written. The mark schemes have been composed to assess **quality of response** and not to identify expected items of knowledge.

Assessment Objectives

This component requires students to:

AO1	Demonstrate knowledge and understanding of places, environments, concepts, processes, interactions and change, at a variety of scales.
AO2	Apply knowledge and understanding in different contexts to interpret, analyse and evaluate geographical information and issues.
AO3	Use a variety of relevant quantitative, qualitative and fieldwork skills to: • investigate geographical questions and issues • interpret, analyse and evaluate data and evidence • construct arguments and draw conclusions.

The marking grids

Do not think of levels equaling grade boundaries.

Depending on the part of the examination, the levels will have different mark ranges assigned to them. This will reflect the different weighting of Assessment Objectives in particular tasks and across the examination as a whole.

Using the grids

Having familiarised yourself with the descriptors and indicative content, read through the answer and annotate it (as instructed below) to identify the qualities that are being looked for and that it shows. You can now check the levels and award a mark.

Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptors for that level. The descriptors for the level indicate the different qualities that might be seen in the student's answer for that level. If it meets all the descriptors for the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptors and the answer. With practice and familiarity you will find that for better answers you will be able to skip through the lower levels of the mark scheme quickly.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best-fit approach for defining the level and then use the variability of the response to help decide the mark within the level.

Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark.

It is often best to start in the middle of the level's mark range and then check and adjust. If there is a lot of indicative content fully identifiable in the work you need to give the highest mark in the level. If only some is identifiable or it is only partially fulfilled, then give the lower mark.

The exemplar materials used during standardisation will also help. There will be an answer in the standardising materials that will correspond with each level of the mark scheme. This answer will have been awarded a mark by the lead examiner. You can compare the student's answer with the example to determine if it is of the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the lead examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

In addition to the levels descriptors, question specific indicative content is provided as a guide for examiners. This is not intended to be exhaustive and you must credit other valid points.

An answer that contains nothing of relevance to the question must be awarded no marks.

Annotating scripts

You should write a summative comment at the end for each Assessment Objective and indicate the marks for each Assessment Objective being tested at the end of the answer in the margin in sequence. It is vital that the way you arrive at a mark should be recorded on the script. This will help you with making accurate judgements and it will help any subsequent markers to identify how you are thinking. Please do not write negative comments about students' work or their alleged aptitudes.

Section A – Living with Hazards **Total for this section: 40 marks**

Question	Part	Marking guidance	Total marks
01	1	**Which of the following are <u>all</u> typical characteristics of tsunamis?** Key – C: The wave height offshore is low and the wavelength is long. Waves travel very quickly, then slow down on approach to the coast.	**1** **AO1=1**

Question	Part	Marking guidance	Total marks
01	2	**To some extent tropical storms can be predicted. One reason for this is:** Key – D: tropical storms start over deep oceans, which take a long time to heat up, making it easy to predict when storms may occur.	**1** **AO1=1**

Question	Part	Marking guidance	Total marks
01	3	**Which of the following are <u>all</u> examples of geophysical hazards?** Key – A: Earthquakes; landslides; volcanic gases	**1** **AO1=1**

Question	Part	Marking guidance	Total marks
01	4	**Which of the following are conditions leading to intense wildfires?** Key – B: Strong winds blowing over densely forested areas which have suffered drought, allow the wildfires to spread rapidly.	**1** **AO1=1**

Question	Part	Marking guidance	Total marks
01	5	**'The core heats rock in the mantle causing it to rise. This rock cools as it gets further from the core and closer to the crust.'** **This process refers to:** Key – A: convection currents.	**1** **AO1=1**

Question	Part	Marking guidance	Total marks
02		**Figure 1** shows the impacts of a 2018 volcanic eruption in Guatemala, a country in Central America. **Analyse the data shown in Figure 1.**	**6** **AO3=6**

Level	Marks	Descriptor
2	**4 – 6**	**AO3** – Clear selection and analysis of the evidence that has been provided linked to the distribution of volcanic materials. There is an element of comparison. Links are made between the data shown.
1	**1 – 3**	**AO3** – Some basic selection and analysis of the evidence that has been provided, and then appropriate, if simplistic links to the distribution of ash and/or pyroclastic flows with most affected departments. Some basic links are established and suggestions are made. Comparison may be limited.
0	**0**	No creditable content.

Indicative Content

There is a variety of ways of approaching this unseen material.
Students must select the relevant data from the map and look at patterns and relationships between areas severely affected, the pyroclastic flow and the ash. Students should be able to look at the figure and see anomalies and links between the data.

AO3

- Overall the pattern shows ash from the eruption is widespread – 50 to 60% of Guatemala's land area was affected by ash.
- Ash travels up to 225 km north-east.
- Ash flow extends 150 km north-east, but less than a third of this distance south-west.
- Most departments have some aspect of ash fall-out from the eruption – only four departments in the SE had no ash from the eruptions.
- The ash remains contained in Guatemala – but does touch the border with Mexico and El Salvador.
- The ash travels further north than south and extends both north-east and north-west.
- The pyroclastic flow is more contained and small scale than the ash in distribution.
- Both the ash and pyroclastic flows from north from the volcano.
- The ash covers more departments than the pyroclastic flow (ash over 18 whilst pyroclastic flows only are found in three).
- The ash completely covers five out of 18 departments (28% of departments with ash are 100% covered).
- The three most affected departments are those adjacent to the El Fuego volcano.
- Two thirds of the worst affected departments had pyroclastic flows – Chimaltenango and Sacatepéquez.
- Even those classed as a worst affected department, Escuintla (south of the volcano) did not suffer with the pyroclastic flow – it did have ash fallout – over two-thirds of the department.

Question	Part	Marking guidance	Total marks
03		**For a place you have studied at a local scale, assess how the hazardous setting influences the economic and social character of the community.** **AO1** – Knowledge and understanding of a hazardous setting to illustrate the physical nature of the hazard. **AO2** – Application of knowledge and understanding to analyse how the economic, social and political character of a hazardous setting's community reflects the presence and impacts of the hazard and the community's response to the risk.	**9** **AO1=4** **AO2=5**

Level	Marks	Descriptor
3	**7 – 9**	**AO1** – Demonstrates detailed knowledge and understanding of concepts, processes, interactions and change associated with a specific hazardous setting and the social, economic and environmental risks presented. **AO2** – Applies knowledge and understanding to the novel situation, offering detailed analysis and evaluation, drawn appropriately from the context provided. Connections and relationships between different aspects of study are thorough and relevant.
2	**4 – 6**	**AO1** – Demonstrates clear knowledge and understanding of concepts, processes, interactions and change associated with a specific hazardous setting and the social, economic and environmental risks presented. **AO2** – Applies knowledge and understanding to the novel situation, offering clear analysis and evaluation, drawn appropriately from the context provided. Connections and relationships between different aspects of study are evident and relevant.
1	**1 – 3**	**AO1** – Demonstrates basic knowledge and understanding of concepts, processes, interactions and change associated with a specific hazardous setting and the social, economic and environmental risks presented. **AO2** – Applies limited knowledge and understanding to the novel situation, offering some basic analysis and evaluation, drawn from the context provided. Connections and relationships between different aspects of study are basic and of limited relevance.
0	**0**	No creditable content.

Indicative Content

Knowledge and application should be specific to the local scale hazardous setting studied, therefore responses should refer to this.

The content will depend upon the local scale hazardous setting studied.

AO1

- The nature, forms and potential impacts of natural hazards.
- Hazards can be geophysical, atmospheric and hydrological.
- Economic, cultural and political determinates of risk and character of a place/community.
- The nature of vulcanicity/seismic hazards/wildfires/tropical storms – dependant on the hazardous setting studied.
- Distribution and frequency of hazards.
- Primary and secondary impacts of hazards.
- Immediate and long-term responses to hazards.
- Community reflection of hazards' presence, risk and impact.
- Community response to risk.
- Use of the hazard management cycle.

AO2

- Linking a local scale hazardous setting to the relative nature of the hazards studied, eg villagers around Mount Etna risk pyroclastic flows which is relatively dangerous, the frequency or eruptions also pose a greater threat. For locals around the Chaiten volcano the dormancy of the volcano may have influenced a greater level of vulnerability.
- Analysis of the risks posed by the hazards to aspects of character and community.
- The relative importance of the hazard in the setting.
- Examples to help show how the hazardous setting's character and community are linked to the hazard.
- Linking and applying ideas on risk, nature and vulnerability to the place studied in the case study, such as the rapid evacuation of Paradise, California during the 2018 wildfires, due to the typically wealthier socio-economic demographics of the area.
- Analysis of the risks involved in a hazardous setting to make a decision or evaluation on the influence of the hazard on place, character and community, eg the wildfires in 2018 shaped the decisions of many celebrities moving away from their homes temporarily after the wildfires caused higher levels of social anxieties in response to the hazard.
- Evaluation on how the impacts and experience of the hazard reflect in the communities' response to the risk.

Max L1 if hazard is not physical in nature

Question	Part	Marking guidance	Total marks
04		**'Human responses to wildfires are less effective than human responses to seismic hazards.'** **Evaluate this statement with reference to examples you have studied.** **AO1** – Knowledge of impacts and responses to a recent wildfire event and a recent seismic event. Knowledge of the concept of a hazard in a geographical context. **AO2** – Application of knowledge and understanding to evaluate whether human responses to wildfires are more or less effective than human responses to seismic hazards.	**20** **AO1=10** **AO2=10**

Level	Marks	Descriptor
4	**16 – 20**	**AO2** – Detailed evaluative conclusion that is rational and firmly based on knowledge and understanding which is applied to the context of the question. **AO2** – Detailed, coherent and relevant analysis and evaluation in the application of knowledge and understanding throughout. **AO2** – Full evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts. **AO1** – Detailed, highly relevant and appropriate knowledge and understanding of place(s) and environments used throughout. **AO1** – Full and accurate knowledge and understanding of key concepts and processes throughout. **AO1** – Detailed awareness of scale and temporal change which is well integrated where appropriate.
3	**11 – 15**	**AO2** – Clear evaluative conclusion that is based on knowledge and understanding which is applied to the context of the question. **AO2** – Generally clear, coherent and relevant analysis and evaluation in the application of knowledge and understanding. **AO2** – Generally clear evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts. **AO1** – Generally clear and relevant knowledge and understanding of place(s) and environments. **AO1** – Generally clear and accurate knowledge and understanding of key concepts and processes.

		AO1 – Generally clear awareness of scale and temporal change which is integrated where appropriate.
2	**6 – 10**	**AO2** – Some sense of an evaluative conclusion partially based upon knowledge and understanding which is applied to the context of the question. **AO2** – Some partially relevant analysis and evaluation in the application of knowledge and understanding. **AO2** – Some evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts. **AO1** – Some relevant knowledge and understanding of place(s) and environments which is partially relevant. **AO1** – Some knowledge and understanding of key concepts, processes and interactions and change. **AO1** – Some awareness of scale and temporal change which is sometimes integrated where appropriate. There may be a few inaccuracies.
1	**1 – 5**	**AO2** – Very limited and/or unsupported evaluative conclusion that is loosely based upon knowledge and understanding which is applied to the context of the question. **AO2** – Very limited analysis and evaluation in the application of knowledge and understanding. This lacks clarity and coherence. **AO2** – Very limited and rarely logical evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts. **AO1** – Very limited relevant knowledge and understanding of place(s) and environments. **AO1** – Isolated knowledge and understanding of key concepts and processes. **AO1** – Very limited awareness of scale and temporal change which is rarely integrated where appropriate. There may be a number of inaccuracies.
0	**0**	No creditable content.

Indicative Content

Content will depend on recent examples chosen.

AO1

- Hazard perception is controlled by people's cultural and socio-economic circumstances which will influence risk management of both wildfires and seismic events.
- There is no one set response to a natural hazard and these are determined by governments and individuals.
- Success of responses to wildfires and seismic hazards depend on incidence, magnitude and distribution of a hazard alongside frequency, magnitude and vulnerability.
- Level of development of an area will influence how well hazards can be prepared for and responded to (eg may lack wealth and technology).
- The causes and factors increasing the risk and impact of wildfires and their link/relationship to risk management.
- The causes of seismic events and their link/relationship to risk management.
- Some comparison of use of management strategies including prediction technology.
- Primary and secondary impacts of wildfires and seismic events and their link/relationship to risk management.
- Short and long-term responses to wildfires and seismic events and their link/relationship to risk management.
- Place knowledge of a recent seismic event.
- Place knowledge of a recent wildfire.

AO2

- Relative comparison between the responses to the recent wildfire and seismic events, eg the response to the Australian wildfires of 2019–2020 proved to be incredibly difficult in comparison to the 2018 Alaskan earthquake.
- Analysis and explanation of the interactions between causes, magnitude and distribution of wildfires and seismic events.
- Analysis and explanation of the interactions between causes, impacts and response to wildfires and seismic events.
- Evaluation of how risk management can reduce the impacts of wildfires and seismic events.
- Evaluation of specific risk management strategies that were used to response to reduce the impacts of a specific recent wildfire and seismic event, eg evacuation occurred in both the Australian wildfires and the Alaskan earthquake. The slower onset of the wildfire made it very difficult to ensure people had heeded the warning. Emergency personnel involved in rescues were much safer in the case of the earthquake as limited secondary damage was done. Whereas the emergency services involved in Australian wildfires had to put themselves in danger to try to reduce the flames and put out the fires, therefore making the human response less effective in the immediate term.
- Evaluation of other factors – political, cultural, economic that may have also influenced the effectiveness of the response to the recent wildfire and seismic event.
- Analysis of examples to suggest whether wildfire responses or seismic event responses are more effective.
- Comparison between the hazard events and the place-specific characteristics.
- Evaluation and explanation of effectiveness of the responses to both hazard events.

Section B – Hot Desert Systems and Landscapes **Total for this section: 40 marks**

Question	Part	Marking guidance	Total marks
05	1	**Within a desert the main sources of energy driving processes of landscape erosion are:** Key – B: insolation; runoff; winds driven by atmospheric circulation.	**1** **AO1=1**

Question	Part	Marking guidance	Total marks
05	2	**Which of the following <u>all</u> describe social impacts of desertification?** Key – D: Dust clouds affect people's health; forced migration; low water supplies create personal hygiene problems	**1** **AO1=1**

Question	Part	Marking guidance	Total marks
05	3	**'Aeolian erosion shapes rocks into elongated ridges of resistant rock, separated by abraded, deep grooves of less resistant rock.'** **This description refers to the formation of:** Key – D: yardangs.	**1** **AO1=1**

Question	Part	Marking guidance	Total marks
05	4	**Which of the following identifies the characteristics of a sediment cell?** Key – C: Sediment cells identify the inputs, transfers and outputs of sediment between components.	**1** **AO1=1**

Question	Part	Marking guidance	Total marks
05	5	**Which of the following are <u>all</u> locations of hot deserts and their margins?** Key – D: Latitudes of 20° to 30°; in areas experiencing continentality; areas with cold ocean currents	**1** **AO1=1**

Question	Part	Marking guidance	Total marks
06		**Figure 2** shows the maximum temperatures around the Arabian desert. Map A – current (2021) maximum temperatures Map B – projected maximum temperatures between 2071–2100 with global climate change controls. Map C – projected maximum temperatures between 2071–2100 without global climate change controls. **Analyse the data shown in Figure 2.**	**6** **AO3=6**

Level	Marks	Descriptor
2	**4 – 6**	**AO3** – Clear selection of evidence from the maps provided and appropriate comparison of evidence. Making appropriate use of specific distribution to support the analysis.
1	**1 – 3**	**AO3** – Basic selection of evidence from the maps provided and some comparison of evidence. Ideas are isolated or show basic ideas.
0	**0**	No creditable content.

Indicative Content

There is a variety of ways of approaching this unseen material.

Students should analyse the three maps to identify changes and distribution of temperature changes relative to the margins of the Arabian Desert.

AO3

- In both scenarios there will be significant temperature increases.
- Temperature increases go beyond the desert margins in all directions – noticeably south into Yemen and north into Iraq.
- Jordan experiences very little difference between the three maps and would increase in temperature only a little.
- Central and south-eastern Iraq experiences one of the largest changes in both scenarios – up to 8 ˚C both with and without climate change control measures.
- Without climate control measures Iraq experiences temperatures up to 62 ˚C
- Without climate control measures there is a stretch (running along the Gulf) of up to 2000 km of temperature up to 62 ˚C – whereas with measures this is restricted to approximately 500 km.
- Temperature increase is more severe within the desert boundary and margins experience increases of temperature.
  - Students may discuss a change in extending the desert's margins.
- Central and the western margin of the Arabian desert in Saudi Arabia experience the smallest changes.
- Coastal areas experience only small or no temperature changes with climate change control measures, however temperatures will increase without these measures.

Question	Part	Marking guidance	Total marks
07		**'Time is the most important factor in the formation of desert landforms.'** **Assess the above statement with reference to <u>one or more</u> desert landforms.** **AO1** – Knowledge and understanding of the relationship between desert processes, time, landforms and landscapes. Knowledge and understanding of hot desert processes of erosion, transportation and deposition from wind and water. Knowledge and understanding of landforms created by high wind and water. Knowledge and understanding of the role of weathering in hot deserts. **AO2** – Application of knowledge and understanding of the specific role of time in creating landforms and landscapes. Evaluation of the relationship between desert processes, time, landforms and landscapes. There should be an application of how time is involved in creating features including wadis, sand dunes, deflation hollows etc. An application of the link between time, desert processes and desert landforms. Students should apply their ideas to areas they have studied.	**9** **AO1=4** **AO2=5**

Level	Marks	Descriptor
3	**7 – 9**	**AO1** – Demonstrates detailed knowledge and understanding of the processes and landforms in mid and low latitude desert settings. Clear ideas on the role of time in determining processes and landforms of hot desert environments. **AO2** – Applies knowledge and understanding to the novel situation, offering detailed analysis and evaluation, drawn appropriately from the context provided. Connections and relationships between different aspects of study are thorough and relevant.
2	**4 – 6**	**AO1** – Demonstrates clear knowledge of the processes and landforms in mid and low latitude desert settings. Basic ideas on the role of time in determining processes and landforms of hot desert environments. **AO2** – Applies knowledge and understanding to the novel situation, offering clear analysis and evaluation, drawn appropriately from the context provided. Connections and relationships between different aspects of study are evident and relevant.
1	**1 – 3**	**AO1** – Demonstrates basic knowledge and understanding of time, landforms and processes in mid and low latitude desert settings. **AO2** – Applies limited knowledge and understanding to the novel situation, offering some basic analysis and evaluation, drawn from the context provided. Connections and relationships between different aspects of study are basic and of limited relevance.

0	**0**	No creditable content.

Indicative Content

Students can use one or more desert landforms to address this question and still access full range of marks.

AO1

- Desert landscapes are unique to the geology and processes.
- Wind and water action affect deserts at differing rates.
- Weathering is a pre-requisite to erosional processes.
- All processes take time and the diurnal temperature change supports the role of mechanical weathering – this occurs slowly.
- Processes of wind and water are unlikely to be 'seen' regularly and desert landforms were formed over very long periods of time.
- Landforms such as the Grand Canyon may be resultant relic features of tectonic uplift.
- Fluvial features may have formed in wetter geological time periods.
- Landscapes in deserts are cyclical and plateaus and pediplains can become eroded and weathered again.
- Knowledge of case study of landscapes.

AO2

- A clear explanation of the links between time, desert processes and landforms.
- The landscape features should be linked and associated with specific processes and landscapes – there should be reference and evaluation of the importance of time.
- Critical evaluation of whether time is important in creating desert landforms.
- Other factors could be discussed (such as sand storms and flooding).
- Analysis of how landforms can be created by multiple processes interacting.
- A reasoning of how landforms and processes may have changed over time and the dominant outcome may have altered.
- The scale of the landscape and specific landforms could be considered and evaluated against the importance of time.

Question	Part	Marking guidance	Total marks
08		**'All landforms in hot desert landscapes are essential in the creation of other landforms.'** **Evaluate to what extent you agree with this statement.** **AO1** – Knowledge and understanding of systems in physical geography and their application to the development of desert landscapes. Knowledge and understanding of the origin and development of landforms – aeolian and fluvial. **AO2** – Application of knowledge and understanding to analyse the systems approach to deserts and evaluate whether all landforms help create other landforms.	**20** **AO1=10** **AO2=10**

Level	Marks	Descriptor
4	**16 – 20**	**AO2** – Detailed evaluative conclusion that is rational and firmly based on knowledge and understanding which is applied to the context of the question. **AO2** – Detailed, coherent and relevant analysis and evaluation in the application of knowledge and understanding throughout. **AO2** – Full evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts. **AO1** – Detailed, highly relevant and appropriate knowledge and understanding of place(s) and environments used throughout. **AO1** – Full and accurate knowledge and understanding of key concepts and processes throughout. **AO1** – Detailed awareness of scale and temporal change which is well integrated where appropriate.
3	**11 – 15**	**AO2** – Clear evaluative conclusion that is based on knowledge and understanding which is applied to the context of the question. **AO2** – Generally clear, coherent and relevant analysis and evaluation in the application of knowledge and understanding. **AO2** – Generally clear evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts. **AO1** – Generally clear and relevant knowledge and understanding of place(s) and environments. **AO1** – Generally clear and accurate knowledge and understanding of key concepts and processes.

		AO1 – Generally clear awareness of scale and temporal change which is integrated where appropriate.
2	**6 – 10**	**AO2** – Some sense of an evaluative conclusion partially based upon knowledge and understanding which is applied to the context of the question. **AO2** – Some partially-relevant analysis and evaluation in the application of knowledge and understanding. **AO2** – Some evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts. **AO1** – Some relevant knowledge and understanding of place(s) and environments which is partially relevant. **AO1** – Some knowledge and understanding of key concepts, processes and interactions and change. **AO1** – Some awareness of scale and temporal change which is sometimes integrated where appropriate. There may be a few inaccuracies.
1	**1 – 5**	**AO2** – Very limited and/or unsupported evaluative conclusion that is loosely based upon knowledge and understanding which is applied to the context of the question. **AO2** – Very limited analysis and evaluation in the application of knowledge and understanding. This lacks clarity and coherence. **AO2** – Very limited and rarely logical evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts. **AO1** – Very limited relevant knowledge and understanding of place(s) and environments. **AO1** – Isolated knowledge and understanding of key concepts and processes. **AO1** – Very limited awareness of scale and temporal change which is rarely integrated where appropriate. There may be a number of inaccuracies.
0	**0**	No creditable content.

Indicative Content

AO1

- The systems concept – inputs; outputs; stores; flows and transfers; sinks; positive/negative feedback; dynamic equilibrium.
- Feedback loops – both positive and negative create a balance and change in deserts.
- Sources of energy in deserts.
- Aridity index and water balance.
- Sediment sources, cells and budgets explore how deserts change and sources of sediment can be part of desert processes and features.
- Knowledge of the specific landforms in deserts – both aeolian and fluvial.
- Clear knowledge on the main processes shaping specific features, eg wadi – water; zeugen – wind
- Aeolian desert processes of deflation, abrasion, transportation and deposition.
- Fluvial processes of erosion, transportation and deposition.
- The role of weathering.
- The interactions between weathering, aeolian and fluvial processes.
- Development and origins of desert landforms such as wadis, sief dunes and inselbergs.

AO2

- Analysis of the systems concept and its application to the development of desert landscapes
- Analysis of how related landforms combine to create landscapes characteristic of mid and low latitude deserts.
- Example landforms used to justify the interactions between different landforms and processes.
- Eg Sand is essential in the process of abrasion, and helps to erode surfaces of rocks to make landforms such as rock pedestals and ventifacts. This same sand that abrades is transported and deposited to make barchans and other sand dunes – creating a cyclical process within the desert sediment cell.
- Sand blown from sand dunes can become part of the fluvial system and end up as alluvial fans or be used to abrade wadis and inselbergs.
- Analysis of the processes shaping desert landforms and their role in creating multiple different landscapes.
- Knowledge and understanding to identify and discuss interactions between different landforms.
- Examples used to analyse whether all desert landforms create other landforms, eg wind deflates the ground and erodes ventifacts, this in turn creates sand particles; the particles are part of the abrasion process; particles can be deposited within sand dunes; particles from the dunes are picked up and used in abrasion.
- A conclusion of whether all desert landforms are integral to creating other desert landforms with reference to the systems approach to physical geography.
- There may be some discussion of landscapes containing many landforms, including Badlands and specific examples of features at the top level, as to how landforms make up a whole landscape in arid and semi-arid areas.
- Evaluation of system inputs in deserts and their role in transfers, flows and processes.

Assessment Objective grid

	AO1	AO2	AO3	Total
Section A				
01.1	1			1
01.2	1			1
01.3	1			1
01.4	1			1
01.5	1			1
02			6	6
03	4	5		9
04	10	10		20
Section B				
05.1	1			1
05.2	1			1
05.3	1			1
05.4	1			1
05.5	1			1
06			6	6
07	4	5		9
08	10	10		20
Unit total	38	30	12	80