OXFORD
INTERNATIONAL
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INTERNATIONAL GCSE
GEOGRAPHY
9230

Paper 1 Living with the Physical Environment

Mark scheme

June 2022

Version: 1.0 Final

226Y9230/1/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

Level of response marking instructions

Level of response mark schemes are broken down into levels, each of which has a descriptor. The descriptor for the level shows the average performance for the level. There are marks in each level.

Before you apply the mark scheme to a student's answer read through the answer and annotate it (as instructed) to show the qualities that are being looked for. You can then apply the mark scheme.

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 descriptor for that level. The descriptor for the level indicates the different qualities that might be seen in the student's answer for that level. If it meets 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 descriptor and the answer. With practice and familiarity you will find that for better answers you will be able to quickly skip through the lower levels of the mark scheme.

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, ie if the response is predominantly level 3 with a small amount of level 4 material it would be placed in level 3 but be awarded a mark near the top of the level because of the level 4 content.

Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark. The descriptors on how to allocate marks can help with this. The exemplar materials used during standardisation will help. There will be an answer in the standardising materials which 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 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.

Indicative content in the mark scheme is provided as a guide for examiners. It is not intended to be exhaustive and you must credit other valid points. Students do not have to cover all of the points mentioned in the Indicative content to reach the highest level of the mark scheme.

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

Section A – The challenge of natural hazards

Question 1

Qu	Part	Marking Guidance	Total marks
01	1	**Give two features of an earthquake.** • Sudden movement of the Earth's crust (1). • Violent/gentler shift/vibration of the Earth's crust (1). • Release of stored energy (1). • Shock waves released (1) • which are stronger nearer the epicentre (1) • and radiate out from here (1). • Epicentre(1) • Focus (1) 2 x 1	**2 marks AO1=2**

Qu	Part	Marking Guidance	Total marks
01	2	**State the mode for the magnitude of the earthquakes shown in Figure 1.** 7.1	**1 mark AO4=1**

Qu	Part	Marking Guidance	Total marks
01	3	**Calculate the mean number of deaths resulting from the earthquakes shown in Figure 1.** The answer is 1675.5, accept 1675 or 1676.	**1 mark AO4=1**

Qu	Part	Marking Guidance	Total marks
01	4	**How useful is the mean for analysing the number of deaths shown in Figure 1?** • There is a large range of figures from 0 to 9000 (1), • only one is above 1000/3 are below 50 (1). • The mean does not give a clear/representative figure for the • information (1). • Planning would be different depending on the location (1) due to the large range of figures/not well informed by the use of the mean. Credit positives such as can compare deaths each year (1) and determine whether higher/lower than average(1) 1 + 1 for developed idea that must include an evaluative statement for 2 marks.	**2 marks AO3=2**

<table>
<tr><th>Qu</th><th>Part</th><th>Marking Guidance</th><th>Total marks</th></tr>
<tr><td>01</td><td>5</td><td>
With the help of Figure 1, suggest possible reasons for the weak relationship between magnitude and the number of deaths resulting from earthquakes.
<table>
<tr><td>Level 2 (Clear)</td><td>3–4 marks</td><td>Clear explanation for the limited relationship.
Clear links between magnitude and deaths for places included in Figure 1.
Provides evidence to support the limited relationship.</td></tr>
<tr><td>Level 1 (Basic)</td><td>1–2 marks</td><td>Simple explanation for the limited relationship.
Some links between magnitude and deaths for place(s) included in Figure 1 – or may be generic.
May give figures to support the limited relationship.</td></tr>
<tr><td></td><td>0</td><td>No relevant content.</td></tr>
</table>
Indicative content

Some areas may have low population density, or even no inhabitants so there may be few deaths, even though the earthquake may be severe as in Peru. Populated areas may be a long way from the epicentre and time of day may have significant bearing on impact. Some areas, such as Nepal may be poorer and have less resistant buildings so there are more casualties when they collapse leading to the highest number of deaths, even though the Peru earthquake had a higher magnitude. Some areas may have more plans in place in preparation for earthquakes and so be able to get to survivors who are trapped quicker, reducing the death rate. Some areas may be richer and be able to invest in better infrastructure so buildings and roads don't collapse and emergency teams are prepared and on the scene quickly, such as in Mexico in contrast to Ecuador and Nepal. Specific circumstances may have an impact on the number of deaths such as liquefaction in Mexico, where there are more deaths than in Alaska despite the same magnitude earthquake.
</td><td>4 marks
AO2=2
AO3=2</td></tr>
</table>

<table>
<tr><th>Qu</th><th>Part</th><th>Marking Guidance</th><th>Total marks</th></tr>
<tr><td>01</td><td>6</td><td>

Use a named example to discuss the primary and secondary effects of a tectonic hazard.

<table>
<tr><td>Level 3 (Detailed)</td><td>5–6 marks</td><td>Specific, detailed use of own knowledge of primary and secondary effects of a named tectonic hazard.
Statements are developed and linked, logically ordered with purposeful discussion of the different effects.</td></tr>
<tr><td>Level 2 (Clear)</td><td>3–4 marks</td><td>Some specific use of own knowledge of primary and/or secondary effects of a named tectonic hazard.
Some statements are developed and linked, logically ordered with some discussion of the different effects.</td></tr>
<tr><td>Level 1 (Basic)</td><td>1–2 marks</td><td>Simple, separate statements describing generic primary and/or secondary effects of a tectonic hazard.
Order may be random.</td></tr>
<tr><td></td><td>0</td><td>No relevant content.</td></tr>
</table>

Indicative content

Content will depend on example used. The international textbook uses Chile and Nepal for earthquakes so these are likely to feature frequently, but any example of an earthquake or volcanic eruption is valid. For Nepal, primary effects led to 9000 deaths and 200 000 injured as houses and other buildings collapsed, leaving 3 million homeless – the secondary effect impacting many more people than the arguably more serious primary effects. Water, sanitation, electricity and communication were all affected, with many shops being destroyed. This had an impact on food supplies which was a key secondary impact. Avalanches and landslides were important secondary impacts on Mt Everest and Gandaki River and whilst the effects were severe, they were more localised than the destruction caused initially by the ground shaking.

</td><td>6 marks
AO1=3
AO2=3</td></tr>
</table>

Qu	Part	Marking Guidance	Total marks
01	7	**What is the wind direction at X in Figure 2?** South east (1).	**1 mark AO4=1**

Qu	Part	Marking Guidance	Total marks
01	8	**Identify two different facts about the global atmospheric circulation shown in Figure 2.** Any valid fact from the figure, such as: • Low pressure at the Equator/high pressure at 30 degrees N/S () • there are three separate cells (1) • winds come together at the Equator (1) • winds come together in areas of low pressure (1) • winds blow out from areas of high pressure (1) • air descends where there is high pressure (1) • air rises in areas of low pressure (1) • two or more areas of low and/or high pressure (1).	**2 marks AO4=2**

Qu	Part	Marking Guidance	Total marks
01	9	**Outline one cause of tropical storms.** • Tropical storms form where ocean temperatures rise above 27 degrees Celsius (1) • and water vapour is evaporated from the ocean surface (1d). • The intense heat in tropical areas (1) • makes the air unstable as it is hotter at the surface (1d) • causing it to rise (1d). • Tropical storms form between 5–15 degrees north and south of the Equator (1) • as they need to develop spin (1d) • and enough force (Coriolis) is found here (1d). 1 + 1 for a developed point.	**2 marks AO1=2**

<table>
<tr><th>Qu</th><th>Part</th><th>Marking Guidance</th><th>Total marks</th></tr>
<tr><td>01</td><td>10</td><td>
‘Immediate responses to tropical storms are more important than long-term responses.’

To what extent do you agree with this statement?

Use Figure 3a and Figure 3b and your own knowledge.

<table>
<tr><td>Level 3 (Detailed)</td><td>7–9 marks</td><td>Statements are developed and linked, logically ordered with reference to immediate and long-term responses; use of figure and own knowledge.
There is explicit assessment of the extent to which immediate responses are more important than long-term responses; comment on importance is likely to include comments throughout the answer as well as a concluding statement.
A coherent case is put forward.</td></tr>
<tr><td>Level 2 (Clear)</td><td>4–6 marks</td><td>Some statements are developed and linked, logically ordered with reference to immediate and/or long-term responses; use of figure and/or own knowledge.
There is some assessment of the extent to which immediate responses are more important than long-term responses; comment on importance may include comments throughout the answer and/or a concluding statement.
There are some points made in putting forward a case.</td></tr>
<tr><td>Level 1 (Basic)</td><td>1–3 marks</td><td>There is reference to immediate or long-term responses; use of figure or own knowledge – generic on tropical storms.
Simple, separate statements, possibly in a random order.
There may be a basic attempt to assess importance with simple points noted.
Generic answers with no specific reference to tropical storms.</td></tr>
<tr><td></td><td>0</td><td>No relevant content.</td></tr>
</table>
Indicative content

There should be reference to both immediate responses – as shown by the evacuation in Figure 3a where a route out is clearly identified to take people out of danger – and long-term responses as seen in Figure 3b where buildings are being repaired in the aftermath of a tropical storm.
</td><td>9 marks
AO1=3
AO2=3
AO3=3</td></tr>
</table>

		Other immediate responses may include the need to search for and rescue people; provide emergency hospital treatment, possibly field hospitals; ensure there is clean water and food, and temporary shelter possible in the form of tents or communal/public buildings. Longer-term responses will include the rebuilding of houses (to better standards – reinforced to withstand the strong winds and built on stilts above flood level), rebuilding roads, ports and airports to enable trade and access, developing better monitoring systems and better planning and preparation so that people can get out of danger areas with education raising awareness. The command is 'to what extent' and the level of discussion and evaluative words and conclusion will drive the levels, as so too will the need to refer to both immediate and long-term responses, the figure and own knowledge. Any decision and assessment is valid as long as it reflects the evidence. Comments are likely to relate to the need for emergency help to save lives and protect survivors from spread of disease, the weather versus the need to ensure long-term security in terms of jobs but also in trying to reduce the severity of the effects. It is perfectly acceptable to suggest that both are equally important in different ways.	

Section B – The living world

Question 2

Qu	Part	Marking Guidance	Total marks
02	1	**Complete the following sentences to describe the characteristics of an ecosystem.** Ecosystems are made up of two components. These are biotic and abiotic/living and non-living/plants and animals and climate and soils (1). Ecosystems vary in scale from very small/local/pond to worldwide/global/tropical rainforest (1). 2 x 1	**2 marks** **AO1=2**

Qu	Part	Marking Guidance	Total marks
02	2	**Which one of the following statements is correct?** **C** There is more deciduous forest in the northern hemisphere than the southern hemisphere. (No mark if more than one circle is shaded.)	**1 mark** **AO4=1**

Qu	Part	Marking Guidance	Total marks
02	3	**Use Figure 4 to identify two differences in the distribution of hot deserts and tropical rainforests.** • Hot deserts are found further away from the Equator than tropical rainforests (1). • The largest area of hot desert is in Africa, while the largest area of tropical rainforest is in South America (1). • Hot deserts are found more on the western parts of continents than tropical rainforest (1). • There is a larger area of tropical rainforest than hot desert in South America. • There is a larger area of hot deserts than tropical rainforest in the northern Hemisphere. Statement must make difference clear to be creditworthy. 2 x 1 mark for each difference stated.	**2 marks AO4=2**

Qu	Part	Marking Guidance	Total marks
02	4	**Complete Figure 5 by adding the following information for December.** 1 mark for correctly plotting the temperature *in the middle of the column* **and** extending the line. 1 mark for inserting the rainfall as a bar at 235 mm – approximately in the middle of 230 and 240 mm.	**2 marks AO4=2**

<table>
<tr><th>Qu</th><th>Part</th><th>Marking Guidance</th><th>Total marks</th></tr>
<tr><td>02</td><td>5</td><td>
Suggest how climate in an area of tropical rainforest may affect the soil.

Use Figure 5 and your own understanding.

<table>
<tr><td>Level 2 (Clear)</td><td>3–4 marks</td><td>Some reference to both Figure 5 and own understanding.
Explanation is clear with sequence linking climate conditions of either rainfall or temperature to the soil.
Statements are linked showing understanding.</td></tr>
<tr><td>Level 1 (Basic)</td><td>1–2 marks</td><td>Some reference to either Figure 5 and/or own understanding.
Partial explanation with some aspects of sequence linking climate conditions of either rainfall or temperature. Statements are simple and separate.</td></tr>
<tr><td></td><td>0</td><td>No relevant content.</td></tr>
</table>
Indicative content

There should be an awareness of the impact of very hot and wet conditions on the soil. There are many leaves and other plant matter that fall to the ground as the climate gives excellent growing conditions. This material will decay very quickly as a result of it being hot and humid adding nutrients to the (top layer of the) soil. The heavy rain can wash these nutrients down through the soil – leaching – and make the surface layers infertile if there is no forest. A lack of forest cover can also lead to soil erosion as the top layer is washed away by heavy rain.

Reference to Figure 5 can be implied or explicit.
</td><td>4 marks
AO2=2
AO3=2</td></tr>
</table>

<table>
<tr><th>Qu</th><th>Part</th><th>Marking Guidance</th><th>Total marks</th></tr>
<tr><td>02</td><td>6</td><td>
Suggest reasons for the amount of vegetation cover and level of biodiversity in hot deserts.

Use evidence from Figure 6 and your own knowledge.

<table>
<tr><td>Level 3 (Detailed)</td><td>7–9 marks</td><td>Amount and biodiversity are both addressed.
Statements are developed and linked, logically ordered with reference to the feature and reason.
There is specific explanation of features and the conditions indicating, for example, how spines/small leaves reduce water loss by transpiration.
A coherent account is put forward, with reference to Figure 6 and own understanding.</td></tr>
<tr><td>Level 2 (Clear)</td><td>4–6 marks</td><td>Amount and/or biodiversity is/are addressed.
Some statements are developed and linked, with some reference to the feature and reason.
There is some clear explanation of features and the conditions indicating, for example, how some plants only grow after rainfall.
Figure 6 and/or own understanding is/are present.</td></tr>
<tr><td>Level 1 (Basic)</td><td>1–3 marks</td><td>Amount or biodiversity is addressed.
Simple, separate statements, possibly in a random order.
There may be a basic attempt to explain and link the feature with a reason.
Figure 6 or own understanding is present.</td></tr>
<tr><td></td><td>0</td><td>No relevant content.</td></tr>
</table>

Indicative content

The command is ‘suggest reasons’ and so there should be reference to (the lack of) vegetation cover/the presence of many areas where the soil is exposed and the (limited) variety of plants that are present and an awareness of how these are the result of the climate and possibly the soils and people.
The linking of the two elements – feature with a reason – is critical to progress through the levels as is addressing both elements – of limited vegetation cover and low biodiversity. Level of biodiversity may refer to plants or animals.
If candidates make a case for different levels of cover and biodiversity, credit should be awarded if evidence or own knowledge is used in support.
</td><td>9 marks
AO1=3
AO2=3
AO3=3</td></tr>
</table>

		The limited amount of rainfall (less than 250 mm per year) and very high temperatures (over 35 degrees Celsius) mean that the environment is hostile to vegetation. Only small amounts (as shown with sandy appearance of desert floor in the photograph) can be supported due to the limited amount of water – the small amount made worse by high levels of evaporation in the high temperatures. The climate means there is little soil – with little organic matter, further limiting the amount of vegetation that will grow. Only certain plants can survive in the desert condition such as grasses/cactus visible in the photograph. These have to be able to withstand long periods without water and can do this in a number of ways, such as by storing water in their stems – like the cactus; by having small leaves or needles/spines to reduce the loss of water from them by transpiration; only growing after rain – adding to biodiversity and overall cover in the short term. Similarly animals like the camel adapt to being able to survive in the desert with wide feet to ensure stability in the sand, a hump to store fat when food is short and double eyelashes to offset the effects of blowing sand. People can also have an impact on cover and diversity – desertification and its causes can be referred to in this context.	

Section C – Physical landscapes
Coastal landscapes

Question 3

Qu	Part	Marking Guidance	Total marks
03	1	**Outline the process of mechanical weathering.** • Mechanical weathering is often the impact of temperature change (1) which causes rocks to be weakened and to break up (1) • in the place they are found (1). • It can involve salt crystals growing which puts pressure on the rock (1) – another type of physical weathering (1). • Freeze thaw weathering is the result of expansion of water as it freezes putting pressure on the rock (1) and causes bits to break off(1) • No credit for an example o mechanical weathering. 2 x 1	**2 marks AO1=2**

Qu	Part	Marking Guidance	Total marks
03	2	**Identify two pieces of evidence which show that mass movement has taken place in Figure 7.** • Evidence is the material at the foot of the cliff (1), • the shrubs/vegetation in the water which would have been at the top (1), parts of clifftop overhanging (1) • and the angle that is visible in the lower part which is different from that higher up (1). 2 x 1	**2 marks AO4=2**

Qu	Part	Marking Guidance	Total marks
03	3	**Calculate the amount of retreat from 1747–2020.** 270 m – 120 m = 150 m Units needed for mark.	**1 mark AO4=1**

<table>
<tr><th>Qu</th><th>Part</th><th>Marking Guidance</th><th>Total marks</th></tr>
<tr><td>03</td><td>4</td><td>
Assess the effectiveness of groynes in protecting the coast.

Use Figure 9 and your own understanding.

<table>
<tr><td>Level 2 (Clear)</td><td>3–4 marks</td><td>Explicit and supported assessment of effectiveness using both Figure 9 and own understanding.
Developed and linked statements, logically ordered.</td></tr>
<tr><td>Level 1 (Basic)</td><td>1–2 marks</td><td>Basic assessment, using either Figure 9 or own understanding.
Simple, separate statements possibly in a random order.</td></tr>
<tr><td></td><td>0</td><td>No relevant content.</td></tr>
</table>
Indicative content

There should be an awareness of what groynes are, how they work and whether the strategy as shown in the photograph is effective and possible recognition of the impact in other areas.
The groynes in the photo are wooden ones, built at right angles to the coast. They are built to prevent longshore drift (where material is moved up the beach at the angle of the approaching/prevailing wind and straight back down the beach via swash and backwash and so shifted along the beach) and to stop sand/shingle from being moved further along the coast. Keeping the beach in place protects the coast/cliffs behind from erosion as the beach material builds up behind the groyne. This is clearly effective in Figure 9 as the material can be seen to reach the height of the groyne behind it showing that it has piled up here as it can't be moved further along due to the groyne being an obstacle in the way. The amount of material is lower on the side of the groynes facing the camera. Thus, the beach is protected here although there may be issues further down the coast as the beach is starved of material.
</td><td>4 marks
AO2=2
AO3=2</td></tr>
</table>

<table>
<tr><th>Qu</th><th>Part</th><th>Marking Guidance</th><th>Total marks</th></tr>
<tr><td>03</td><td>5</td><td>

Explain how physical processes have created the coastal landforms shown in Figure 10.

<table>
<tr><td>Level 3 (Detailed)</td><td>5–6 marks</td><td>Complete, well-ordered explanation of formation that addresses sequence and processes of headland and bay formation – with some description of processes.
Detailed, developed and linked statements that are logically ordered.</td></tr>
<tr><td>Level 2 (Clear)</td><td>3–4 marks</td><td>More complete explanation that addresses aspects of sequence and specific processes of headland and/or bay formation.
Statements are linked and usually logically ordered.</td></tr>
<tr><td>Level 1 (Basic)</td><td>1–2 marks</td><td>Simple, separate statements, possibly in a random order.
Partial explanation focusing on either sequence or process of headland or bay formation.</td></tr>
<tr><td></td><td>0</td><td>No relevant content.</td></tr>
</table>

Indicative content

Headlands and bays should be recognised as the key landforms visible which form due to the presence of different types of rock along the coast. Layers of hard and soft rock at right angles to the coast will be eroded at different rates by approaching waves. Harder rock will be more resistant to erosion, such as abrasion and hydraulic power, whist softer rock will wear away more easily. This results in areas of harder rock such as granite forming headlands, which stick out into the sea as is shown in the background in the photo, whilst the softer rock such as clay will form a bay, shown by bay and beach in the foreground. Beaches often develop at the head of the bay, as is present on the left of the photo. This is due to the area being sheltered by the headland(s) and so sand is deposited there. Headlands may also result where rock layers are parallel to the coast – the outer layer of hard rock is broken through at a weaker point, allowing the waves to gouge out the soft rock behind, creating a more circular cove.

</td><td>**6 marks**
AO2=3
AO3=3</td></tr>
</table>

Section D – Physical landscapes
Hot desert landscapes or River landscapes

Question 4 – Hot desert landscapes

Qu	Part	Marking Guidance	Total marks
04	1	**Complete Figure 11 by adding the following information.** 1 mark for accurate plotting of information.	**1 mark AO4=1**

Qu	Part	Marking Guidance	Total marks
04	2	**Describe the trend shown in Figure 11.** • Positive correlation (1) • as wind speed increases, the size of material that can be carried increases (1) • with an item of evidence to support such as very small pieces of 0.1 mm is 17 cm per sec win versus 3.0 mm is 63 cm per sec (1); • steep rise in both (1), • form a smooth curve (1) • although figure for 1.0 is slightly lower (1). 2 x 1 per basic point; 1 + 1 for a developed point.	**2 marks AO4=2**

Qu	Part	Marking Guidance	Total marks
04	3	**Suggest why A on Figure 11 is an anomaly.** • The value is an anomaly because the particle size is bigger (1.5 mm in contrast to 1.0 mm) (1) • but is being picked up by a slower wind speed (1); • this is going against the trend of the rest of the graph (1) • where the bigger the particle, the faster the wind speed needed (1) • underlying reasons linked to possible physical conditions or issues with data collection (1).	**2 marks AO3=2**

<table>
<tr><th>Qu</th><th>Part</th><th>Marking Guidance</th><th>Total marks</th></tr>
<tr><td>04</td><td>4</td><td>
Explain how physical processes have shaped the landform shown in Figure 12.

Use Figure 12 and your own understanding.

<table>
<tr><td>Level 2 (Clear)</td><td>3–4 marks</td><td>More complete explanation that addresses aspects of sequence and process in the formation of yardangs – the landform shown in Figure 12 – with processes appropriately named.
Developed and linked statements, logically ordered.</td></tr>
<tr><td>Level 1 (Basic)</td><td>1–2 marks</td><td>Partial explanation focusing on either sequence or process in the formation of yardangs – the landform shown in Figure 12.
Simple, separate statements possibly in a random order.</td></tr>
<tr><td></td><td>0</td><td>No relevant content.</td></tr>
</table>

Indicative content

Yardangs should be recognised as the landform visible – which are the long ridges shown in Figure 12 and are formed under certain conditions. There is a need for rock to be in vertical strips, alternating between harder and softer rock, as is shown in the diagram. This allows the softer rock to be eroded faster by the wind as it is less resistant to the erosion process of abrasion, where small particles hit against the rock wearing it away. This leads to the harder rock standing out from the deepened soft rock troughs as in the distinctive upturned hull shape of the yardang shown in the photo – the undercutting near the base itself is due to abrasion. Yardangs only form if the wind is coming parallel to the rock layers so that the differences in hardness can be exploited – they do not occur if there are frequent changes in wind direction.
</td><td>4 marks
AO2=2
AO3=2</td></tr>
</table>

<table>
<tr><th>Qu</th><th>Part</th><th>Marking Guidance</th><th>Total marks</th></tr>
<tr><td>04</td><td>5</td><td>
‘Tourism has only a positive impact in hot desert areas.’

To what extent do you agree with this statement?

Use Figure 13 and your own understanding.

<table>
<tr><td>Level 3 (Detailed)</td><td>5–6 marks</td><td>Detailed, developed and linked statements, logically ordered which show an awareness of the positive impacts of tourism, but also the negative.
There is explicit assessment of ‘to what extent’ which is supported.
Developed and linked statements, logically ordered.
Uses Figure 13 and own understanding.</td></tr>
<tr><td>Level 2 (Clear)</td><td>3–4 marks</td><td>Clear, linked statements which show some awareness of the positive impacts of tourism, but also the negative.
There is some (implied) assessment of ‘to what extent’.
Developed and linked statements, usually logically ordered.
Uses either Figure 13 and/or own understanding.</td></tr>
<tr><td>Level 1 (Basic)</td><td>1–2 marks</td><td>Simple, separate and random points relating to the positive and/or negative impacts of tourism.
There may be some simple assessment of ‘to what extent’.
Uses either Figure 13 or own understanding.</td></tr>
<tr><td></td><td>0</td><td>No relevant content.</td></tr>
</table>

Indicative content

The command is ‘to what extent’, so there must be an assessment of whether tourism is only positive. The image and the text indicates that it is not only positive but that there are some negative aspects. Tourism clearly offers an economic opportunity in hot desert areas as the area is hot and dry, people are drawn in to experience the desert, going on safaris, viewing desert scenery of wadis, dunes etc (here may be detail on a specific desert; the Thar is used in the textbook but areas around Oman, Qatar may also feature) as well as staying in varied types of accommodation, including up-market hotels. This offers many employment opportunities with variety to attract different groups and can kick-start the economy (may refer to multiplier effect as businesses grow to provide food locally and souvenirs). There will be social benefits as children may then go to school; health may improve. But the image and extract suggest that tourism is not only positive.
</td><td>6 marks
AO2=3
AO3=3</td></tr>
</table>

		The long line of people trekking to Uluru will walk on and wear away the surface of the huge rock. In a remote area, there are many people who are seen to intrude on local culture as the Anangu people claim tourists do not respect their landmark which is of spiritual significance to them.	

Question 5 – River landscapes

Qu	Part	Marking Guidance	Total marks
05	1	**Complete Figure 14 by adding the following information for site 7.** 1 mark for accurate plotting of information.	**1 mark AO4=1**

Qu	Part	Marking Guidance	Total marks
05	2	**Describe the trend shown in Figure 14.** • Positive correlation (1) • the width of the channel generally increases as the river flows downstream (1) • with an increase of just under 6m overall (1); • the increase is generally consistent downstream (1) • with the exception of site 5 where the width decreases unexpectedly. 2 x 1 per basic point; 1 + 1 for a developed point.	**2 marks AO4=2**

Qu	Part	Marking Guidance	Total marks
05	3	**Suggest why site 5 on Figure 14 is an anomaly.** • Site 5 is an anomaly because the width reduces (1) • which is against the trend shown/is an exception/it is the only one to show a fall (1) • it would be expected that rivers would increase in width as distance from the source increased (1) • underlying reasons linked to possible physical conditions or issues with data collection (1).	**2 marks AO3=2**

<table>
<tr><th>Qu</th><th>Part</th><th>Marking Guidance</th><th>Total marks</th></tr>
<tr><td>05</td><td>4</td><td>
Explain how physical processes created the fluvial landform shown in Figure 15.

Use Figure 15 and your own understanding.

<table>
<tr><td>Level 2 (Clear)</td><td>3–4 marks</td><td>More complete explanation that addresses aspects of sequence and process in the formation of levees – the landform shown in Figure 15 – with processes appropriately named.
Developed and linked statements, logically ordered.</td></tr>
<tr><td>Level 1 (Basic)</td><td>1–2 marks</td><td>Partial explanation focusing on either sequence or process in the formation of levees – the landform shown in Figure 15.
Simple, separate statements possibly in a random order.</td></tr>
<tr><td></td><td>0</td><td>No relevant content.</td></tr>
</table>

Indicative content

Levees should be recognised as the landform visible which are raised banks at the side of a river channel form in the lower course of a river under specific conditions. As they are outside the usual channel, as seen in the diagram, they form during times of flood. The river is flowing rapidly and carrying a lot of load whilst it is in the channel, but when it bursts its banks due to the high volume of water, the speed slows rapidly and the river cannot carry as much material. As a result, the coarsest is deposited first at the side, increasing the height of the levee. This happens many times to build up the height of the levees adjacent to the channel.
</td><td>4 marks
AO2=2
AO3=2</td></tr>
</table>

<table>
<tr><th>Qu</th><th>Part</th><th>Marking Guidance</th><th>Total marks</th></tr>
<tr><td>05</td><td>5</td><td>
‘Human activity always increases the risk of flooding.’

To what extent do you agree with this statement?

Use Figure 16 and your own understanding.

<table>
<tr><td>Level 3 (Detailed)</td><td>5–6 marks</td><td>Detailed, developed and linked statements, logically ordered which show an understanding of the two hydrographs shown linked to flood risk.
There is explicit assessment of ‘to what extent’ which is supported.
Developed and linked statements, logically ordered.
Uses Figure 16 and own understanding.</td></tr>
<tr><td>Level 2 (Clear)</td><td>3–4 marks</td><td>Clear, linked statements which show some understanding of the two hydrographs shown linked to flood risk.
There is some (implied) assessment of ‘to what extent’.
Developed and linked statements, usually logically ordered.
Uses either Figure 16 and/or own understanding.</td></tr>
<tr><td>Level 1 (Basic)</td><td>1–2 marks</td><td>Simple, separate and random points relating to the hydrographs or flood risk.
There may be some simple assessment of ‘to what extent’.
Uses either Figure 16 or own understanding.</td></tr>
<tr><td></td><td>0</td><td>No relevant content.</td></tr>
</table>

Indicative content

The command is ‘to what extent’ so there must be an assessment of whether the risk of flooding is only increased by people. Floods occur when rivers have a level of discharge that cannot be contained in the channel – these are exceptional rather than usual circumstances. People can certainly increase the risk of flooding. The hydrographs in Figure 15 show that people have a negative impact on flood risk making it more likely and increasing the severity. The first one shows that building towns and cities over areas of countryside leads to a quicker response from the river as the lag time is shorter and the peak is higher – both making flooding much more likely as water cannot infiltrate the ground due to buildings and roads being impermeable. This, together with the drains that are added to remove the water from streets quickly increases the speed the water gets to the river causing flooding.
</td><td>6 marks
AO2=3
AO3=3</td></tr>
</table>

		A similar result can be seen when trees are chopped down – this removes the vegetation that will intercept and slow the flow of the water to the river. The trees would also remove some of the water but it flows quickly over the surface to the river increasing the risk of flooding. Erosion of the soil which is then deposited into the river reduces the capacity and makes the situation even worse. Based on the hydrographs and an explanation of these, there will be agreement with the statement. However, candidates could refer to a flood management strategy or scheme and come to a different conclusion where this is sometimes, but not always, the case.	