

# Extreme Environments

## Exam Question Guidance

Use this guide to ensure you know what each possible question means and which information to use to answer it:

Question	Meaning	Deserts	Chosen - Mountains
Name one extreme environment which you have studied	Give the actual name of the environment studied in lesson	<b>Sahara Desert</b> , Africa (focus on Algeria)	<b>Andes Mountains</b> , South America (focus on Peru)
State two reasons why the environment is classed as extreme	Give the factor such as drought and then say how this threatens life	<b>Drought</b> – as people will die within days in the desert if they have no drinking water	<b>Steep slopes</b> - a person could easily fall and kill themselves
Describe and explain the formation of the extreme environment	Give a detailed account of what created the extreme environment	<b>Desert formation</b> – very dry conditions prevents vegetation growth, bare soil exposed to strong sun which dries soil, strong winds blow soil away, rock exposed and weathered away over millions years to create barren sandy landscape	<b>Fold mountain formation</b> – land (continental plate) called South American Plate collides with sea plate (oceanic) called Nazca. Nazca plate is forced underneath South American plate. Heat underneath from friction and melting plates and pressure of the colliding plates causes them to fold to create mountains.
Name and describe a physical process which operates	State the name and say how it works in that environment	<b>Abrasion</b> – by the wind picking up the sand and blowing it against rocks	<b>Abrasion</b> – by a glacier picking up rocks and grinding them against the rock floor below the ice
Name and describe the resulting landform from the process	State the name and describe what it looks like	<b>Rock pedestal</b> – narrow base, wide top, stripy appearance, smooth surface	<b>U shaped valley</b> – wide and flat floor, steep sides, misfit stream, hanging valleys
Explain how processes caused the formation of the landform	Say how the process of abrasion created the landform	<b>Narrow base</b> – due to high rate of abrasion of rocks at surface as wind carries lots of sand. <b>Wide top</b> – due to lower rate of abrasion as wind higher up carries less sand. <b>Stripy appearance</b> – due to different minerals being exposed in sedimentary rock. <b>Smooth surface</b> – due to abrasion as sand is blasted against the surface (like sand paper)	<b>Wide, flat floor</b> – due to ice filling whole valley and eroding the land away by abrasion as it moves slowly down the valley. <b>Steep sides</b> – due to ice eroding downwards at a fast rate. <b>Misfit stream</b> – after ice melts a small stream flows along the flat valley floor fed by glaciers melting up the valley. <b>Hanging valleys</b> – tributary valleys which did not have large glaciers in them flow into U shaped valley and then the river flows down the steep sides as a waterfall.

Describe the key features of the climate	Comment on the actual rainfall and temperatures including patterns and max/min	<b>Timbuktu, Sahara Desert</b> <b>Temp</b> – hot all year around, peak day 50°C and night 0°C <b>Rain</b> – dry all year round, less than 250mm yr	<b>La Paz, Peru</b> <b>Temp</b> – usually cold and gets colder by 1°C with 100m altitude <b>Rain</b> – usually wet
Explain the key features of the climate	Give reasons for the features of the climate	<b>Temp</b> – hot day as sunny/near equator, cold night – poor heat retention of sand and no cloud which means desert cools very quickly <b>Rain</b> – air sinking over tropics = high pressure = no cloud ALSO no evaporation as no surface moisture in the desert so air is ultra dry	<b>Temp</b> – further from surface of Earth = colder as heat spreads out and is lost to the atmosphere <b>Rain</b> – due to relief rainfall as clouds rise over mountains causing precipitation as water vapour condenses to form clouds
Explain how wildlife (plants and animals) can survive in these extreme conditions	List the adaptations and explain how they help the wildlife to survive	<b>Cactus</b> – large, empty trunk which can store water needed for photosynthesis during droughts (lack of rain for long periods)	<b>Alpaca</b> – very thick wool coat which keeps them warm during cold and windy conditions preventing hyperthermia
State an item which you would take to survive in this extreme environment and justify your choice	Name a piece of equipment and explain how it could help you to survive	<b>Tent (made from goat hair)</b> – during day will provide shade as midday sun can be deadly and at night will keep warm as temperatures can reach freezing. Goat hair is water and wind proof as well for stormy conditions.	<b>Walking boots</b> – to provide necessary support to ankles when walking over rough terrain as an accident in cold conditions could make you immobile and hyperthermia could be a danger
Explain how the local people have overcome the challenges of living in this place	Give examples of how the local people have adapted to the living conditions	<b>Bedouin Nomads</b> – tricks for finding water, move around to find vegetation, special clothing, use camels for transport	<b>Aymara Indians</b> – chew coca leaves to prevent altitude sickness, herd Alpaca which survive in conditions, use wool for clothing which keeps warm
Identify one source of information which you found useful when studying this extreme environment	Name something which you found useful when studying this unit and say why it was useful	<b>GCSE textbook</b> – had sections on the different aspects of the extreme environment. Each section had pictures which helped me to understand what I was learning about. There were also diagrams which helped explain difficult concepts.	
Describe how people use the extreme environment	Name and describe the human activities which take place in the extreme environment	<b>Oil drilling</b> – in Algeria big companies drill for oil then pipe it to coast for selling to other countries – they have to overcome challenges of getting oil from under rocks, piping it to coast, lack of food and water in desert <b>Farming</b> – Bedouin Nomads use the desert for farming by moving their cattle to find plants and water, they have special ways of living (see above)	<b>Tourism</b> – in Machu Picchu tourists visit the old Inca site to carry out the Inca Trail <b>Farming</b> – Aymara Indians use the land for subsistence farming allowing Alpaca to graze on the land <b>Water source</b> – Lima, the capital city of Peru, use the water for HEP to create electricity and for domestic and farming use

Describe the future challenges which there may be in the extreme environment	Name and describe the problems which both people and the environment may face	<p><b>Running out of oil</b> – oil will run out which will leave Algeria with a loss of income</p> <p><b>Desertification</b> – people are making this happen faster through over-farming, and climate change is leading to drought which makes worse</p>	<p><b>Overcrowding</b> – Too many tourists visiting the Inca site leads to pollution and damage of site</p> <p><b>Climate change</b> – changing conditions make farming very risky for Aymara people as crops can easily fail leaving them with nothing</p> <p><b>Melting glaciers</b> – due to climate change – if they disappear then the water supply to Lima will be lost and the city, which is the driest large city on earth, will have no water</p>
Explain how people can develop the extreme environment in the future in a sustainable manner	Give examples of what can be done to develop deserts in the future without causing further problems for people and the environment	<p><b>Solar power generation</b> – Algeria is beginning to cover desert in solar panels – will not run out, is clean energy, perfect for climate (sunny) and landscape (open and flat)</p> <p><b>Integrated farming</b> – plant some crops which help protect soil from rain/wind/scorching from sun, and graze some animals using their poo for manure to keep nutrients in soil</p>	<p><b>Tourist management plan</b> – a plan needs to be set up to limit visitor numbers, making some area closed occasionally to recover, giving local people jobs all year round</p> <p><b>Growing Quinoa</b> – crop is excellent as can survive extreme conditions and provides food source and fuel source, and is full of nutrients needed for survival</p> <p><b>Water conservation/Solar power &amp; wind turbines</b> – in Lima they are planning a water project to recycle waste water and use it for farming and watering green areas. They are also planning to develop solar power to replace HEP as they have perfect conditions with lots wind at sea and sun as desert.</p>
Give reasons to explain why it is important to look after this extreme environment	Explain the dangers of poor management of this environment	<p><b>Climate</b> – the climate of the Earth is delicately balanced and small changes can have disastrous impacts on other areas</p> <p><b>Wildlife</b> – this is habitat to threatened species which need protecting from extinction</p> <p><b>Unique</b> – this environment is unique – once it is gone it cannot be replaced</p> <p><b>Indigenous people</b> – for local people it is their home and they deserve the right to carry on living there</p>	