OCR
RECOGNISING ACHIEVEMENT

GCE

Geography

Advanced Subsidiary GCE

Unit **F761:** Managing Physical Environments

Mark Scheme for January 2011

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Question				Expected Answer	Mark	Rationale
Section A						
1	**(a)**	**Study Fig. 1, a photograph showing the East Lyn River, Devon.**				
		(i)	**Describe the main features of the river and its valley shown in Fig. 1.**	Indicative content: turbulent flow, high velocity, shallow water, large size/amount of bed load, limited suspension load/clear water, steep long profile/steep bed gradient, rapids, variable depth. V-shaped valley, steep sides, narrow floor, interlocking spurs, sinuous/winding route, dense vegetation. **Level 2:** Provides description of at least two features. Must have river/channel and valley for max. **(3-4 marks)** **Level 1:** Identifies features with no description or provides description of one. **(0-2 marks)**	**[4]**	Do not credit meander. Accept pools/riffles. For Level 2 features must be evident in the photograph rather than being generic.

Question				Expected Answer	Mark	Rationale
		(ii)	**Suggest how <u>two</u> natural processes are shaping this valley.**	Indicative content: Fluvial erosion (corrasion, hydraulic action…), vertical direction. Weathering and mass movement on valley sides. **Level 2:** Identifies two natural processes. Causal links clearly explained. Direct reference to the shape of the valley. Good use of technical language. **(5–6 marks)** **Level 1:** Identifies at least one natural process. Links may be stated rather than explained. Gaps in technical language. Max 1 for list of generic processes. One explained well may reach the top of this level. **(0-4 marks)**	**[6]**	One explained well plus one other identified = 5 One explained well plus one other partially explained = 6 Both natural processes could be erosional or both could be sub-aerial. Transport acceptable if linked to shape. The river erodes vertically by processes such as corrasion wearing away the bed and deepening the valley. The river erodes and produces a V-shaped valley.

Question				Expected Answer	Mark	Rationale
	(b)		**State and explain <u>two</u> environmental impacts of flooding.**	Indicative content: submergence of habitats, drowning of animals, waterlogging of soils, water contaminated by sewage, deposition of sediment. **Level 2:** Identifies two impacts and explains the influence of flooding. Links are fully explained with specific reference to role of excess water. **(5-6 marks)** **Level 1:** Identifies valid impact(s). Link(s) may be stated but not fully explained with little/no reference to role of excess water. **(0-4 marks)**	**[6]**	One explained well plus one other identified = 5 One explained well plus one other partially explained = 6 No credit for vague terms such as damage and destruction. Accept agricultural impacts. Human environment acceptable. No credit for causes. The river floods and flood water deposits sediment on the flood plain producing a thick, fertile soil. Flooding forms fertile soil on the floodplain.

Question				Expected Answer	Mark	Rationale
	(c)		**With reference to a located example, describe and explain how a river environment provides opportunities for human activities.**	Indicative content: Differing activities may include industry, transport, residential, energy development, water supply, recreation and conservation. Opportunities include availability of flat land, water source, opportunities for trade/transport, attractive scenery, rare habitats. A range of activities results from the variety of different, positive factors. **Level 3:** Uses a clearly identified example to explain the opportunities for at least two human activities. May comment on the wide range. Cause-effect links are stated and clearly explained. Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. **(8-9 marks)** **Level 2:** Gives a clearly identified example. Cause-effect links are stated but explanation may not be clear. At least one opportunity and at least one activity. Limited/no evidence used. Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. **(5-7 marks)** **Level 1:** Limited or no example. Descriptive observations of human activities. There may be little or no reference to cause-effect links. Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology. Max 2 for generic activities. If no located example then top of level 1 Max. **(0-4 marks)**	**[9]**	The high discharge, fast-flowing water is used to drive turbines and produce hydro-electric power. The fast flowing river is used to produce hydro-electric power. There is a hydro-electric power station on the river.
				Total	**[25]**	

Question				Expected Answer	Mark	Rationale
2	(a)		**Study Fig. 2, a photograph showing the coastline near Lynmouth, Devon.**			
		(i)	**Describe the main features of the coastline shown in Fig.2.**	Indicative content: Steep high cliffs, inlets into cliff face, sandy/stony beach at base of cliff, rocky/stony shore platform, wooded slopes, gradation of beach material, wide beach, berms, slumped cliffs, bay. **Level 2:** Provides description of at least two features. **(3-4 marks)** **Level 1:** Identifies features with no description or provides description of one**.** **(0-2 marks)**	**[4]**	For Level 2 features must be evident in the photograph rather than being generic.
		(ii)	**Suggest how <u>two</u> natural processes are shaping this coastline.**	Indicative content: Wave erosion of cliffs (undercutting/collapse/retreat), wave refraction, weathering and mass movement on cliff faces, longshore drift along the beach, and deposition of sand/stones by waves. **Level 2:** Identifies two natural processes. Causal links clearly explained. Direct reference to the shape of the coastline/landforms. Good use of technical language. **(5-6 marks)** **Level 1:** Identifies at least one natural process. Links may be stated rather than explained. Gaps in technical language. One explained well may reach the top of this level. Max 1 for list of generic processes. **(0-4 marks)**	**[6]**	One explained well plus one other identified = 5 One explained well plus one other partially explained = 6 Both natural processes could be of the same type eg both erosional. Waves break against the base of the cliff, eroding them by hydraulic action leading to undercutting and collapse. Waves erode the cliff when they break.

Question				Expected Answer	Mark	Rationale
	(b)		**Show how <u>two</u> methods of soft engineering can protect coastlines from natural processes.**	Indicative content: Methods include beach nourishment/replenishment, cliff regrading, beach profiling, managed retreat, vegetation stabilisation, ecomatting/geotextile, fencing. **Level 2:** Identifies two methods and explains their protective influence. **(5-6 marks)** **Level 1:** Identifies valid method(s). Link(s) may be stated. One explained well may reach the top of this level. **(0-4 marks)**	**[6]**	One explained well plus one other identified = 5 One explained well plus one other partially explained = 6 Must be from natural processes not human. Beach nourishment involves sand being added to increase the size of the beach so that it absorbs wave energy. Beach nourishment reduces wave energy.

Question				Expected Answer	Mark	Rationale
	(c)		**With reference to a located example, describe and explain how a coastal environment provides opportunities for human activities.**	Indicative content: Differing activities may include industry, transport, residential, energy development, water supply, recreation and conservation. Opportunities include availability of flat land, water source, natural harbour, opportunities for trade, attractive scenery, rare habitats. A range of activities results from the variety of different, positive factors. **Level 3:** Uses a clearly identified example to explain the opportunities for at least two human activities. May comment on the wide range. Cause-effect links are stated and clearly explained. Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. **(8-9 marks)** **Level 2:** Gives a clearly identified example. Cause-effect links are stated but explanation may not be clear. At least one opportunity and at least one human activity. Limited/no evidence used. Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. **(5-7 marks)** **Level 1:** Limited or no example. Descriptive observations of human activities. There may be little or no reference to cause-effect links. Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology. Max 2 for generic activities. If no located example then top of level 1 Max. **(0-4 marks)**	**[9]**	There is deep water and the area is sheltered from winds and waves by the adjacent headland making it an ideal port for large vessels. The headland provides shelter from large waves for the harbour. There is a harbour there.
				Total	**[25]**	

Question				Expected Answer	Mark	Rationale
3	(a)	**Study Fig. 3, two maps showing annual days of melt on the Greenland ice sheet in 1979 and 2007.**				
		(i)	**Describe the pattern of change in annual days of melt shown in Fig. 3.**	Indicative content: Overall increase in area experiencing some melt days, increasing number of melt days with distance inland, greatest increase in the south. Anomaly in NE where area of melt has reduced in size but increased in frequency of days, lack of change in north central area. **Level 2:** Clear identification of at least two elements of general pattern. May recognise anomaly. Uses data/scale/N point from map as evidence. **(3-4 marks)** **Level 1:** Identifies at least one aspect of the pattern. May not use data as evidence. **(0-2 marks)**	**[4]**	

Question				Expected Answer	Mark	Rationale
		(ii)	**Suggest <u>two</u> reasons for this pattern of change.**	Indicative content: Overall increase in area of melt days due to global climate change, increased area inland due to distance from cold ocean current, higher altitude areas inland may be well below zero degrees, anomaly may be related to cold ocean current origin. Increasing ocean temperatures. Melting of ice at coastal margin in south leads to loss of support for continental ice, so they melt quicker. Jet Stream and air masses vary from year to year affecting temperatures in southern Greenland. **Level 2:** Shows understanding of two reasons. Cause–effect links should be related to the pattern for max. **(5-6 marks)** **Level 1:** Shows understanding of at least one reason or knowledge of two. Cause–effect links stated and not explicitly related to the pattern. One explained well and linked to pattern may reach the top of this level. **(0-4 marks)**	**[6]**	One explained well plus one other identified = 5 One explained well plus one other partially explained = 6 No credit for human activities such as resource exploitation in Greenland itself. Global climate change is leading to summer temperatures exceeding zero degrees more frequently. Global warming means there are more melting days.

Question				Expected Answer	Mark	Rationale
	(b)		**Explain <u>two</u> impacts of climate on the characteristics of animals in cold environments.**	Indicative content: Impacts may be on adaptations of specific species. Physiological adaptations to gain heat (eg dark colour to absorb heat) or to retain heat (eg thick fur). Behavioural adaptations to avoid extreme low temperatures (eg hibernate, migrate). Impacts may also be on characteristics of populations eg boom and bust cycles due to variable climate, short breeding cycles due to limited period of favourable conditions, limited diversity due to short food chains and lack of food production in harsh climate. **Level 2:** Identifies two impacts and explains how they are related to the climatic conditions. **(5-6 marks)** **Level 1:** Identifies two impacts or explains one. Cause-effect links may be stated but not clearly explained. One explained well may reach the top of this level. **(0-4 marks)**	**[6]**	One explained well plus one other identified = 5 One explained well plus one other partially explained = 6 Accept impact of climate change. Some animals hibernate in the winter to escape the extreme low temperatures and lack of food. Some animals hibernate in the winter in order to survive.

Question				Expected Answer	Mark	Rationale
	(c)		**With reference to one or more cold environments, examine how meltwater has shaped the landscape.**	Indicative content: Major impacts are erosion and/or deposition by meltwater in glacial/post-glacial climates. Erosion leading to formation of tunnel valleys and overspill valleys/gorges; deposition leading to formation of kames, eskers, varves, outwash plains, braided channels, kettles etc. May also be related to role of water freezing in periglacial climates leading to frost heave and the formation of patterned ground, for example, or freeze-thaw producing scree/talus or linked to nivation. Role of meltwater as a factor affecting rates of movement and thus rates of erosion may be relevant. **Level 3:** Uses a clearly identified example to describe the landscape/landforms and to explain the influence of water on its shaping. Cause-effect links are stated and clearly explained. Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. **(8-9 marks)** **Level 2:** Gives a clearly identified example with description of landscape/landform(s) provided. Some processes identified. Cause-effect links are stated but explanation may not be clear. Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. **(5-7 marks)**	**[9]**	Answer may relate to specific landforms or broader landscape characteristics of eg an outwash plain. At the end of the glacial period large amounts of meltwater are produced and this carries great quantities of sediment. Away from the glacier deposition occurs when the velocity slows and energy is lost forming a large, flat outwash plain. Meltwater at the end of the glacial period deposits sediment to form a flat outwash plain in front of the glacier.

Question				Expected Answer	Mark	Rationale
				Level 1: Limited or no example. Descriptive statement(s) about landscape/landform(s). There may be little or no reference to cause-effect links. Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology. Max 2 for landform or process names only. If no located example then top of level 1 Max. **(0-4 marks)**		There is a wide, flat outwash plain.
				Total	**[25]**	

Question				Expected Answer	Mark	Rationale
4	(a)	**Study Fig. 4, a map showing areas of Africa at risk of desertification.**				
		(i)	**Describe the pattern of areas at risk of desertification shown in Fig. 4.**	Indicative content: areas of greatest risk are around the edges of the "dry" areas, level of risk decreases with distance from the dry areas. Latitudinal nature of pattern to south of Sahara. Smaller area of risk to north of Sahara than to south. High risk areas generally not on/near coast, but some exceptions to that. Answers may refer to areas not at risk, or to varying levels of risk. **Level 2:** Clear identification of at least two elements of pattern. May recognise an anomaly. Uses data from map. **(3-4 marks)** **Level 1:** Identifies at least one aspect of pattern. May not use data as evidence. **(0-2 marks)**	**[4]**	

Question				Expected Answer	Mark	Rationale
		(ii)	**Suggest <u>two</u> reasons for this pattern.**	Indicative content: Answers may refer to- Physical factors leading to desertification, including increasing global temperature and less reliable rainfall. Human factors leading to desertification, including population growth leading to deforestation, overgrazing, over cultivation. Environmental characteristics of places that make them particularly vulnerable to desertification, including their high temperatures, lack of rainfall. **Level 2:** Shows understanding of two reasons. Cause-effect links should be related to the pattern for max. **(5-6 marks)** **Level 1:** Shows understanding of at least one reason or knowledge of two. Cause-effect links stated and not explicitly related to the pattern. One explained well and linked to pattern may reach the top of this level. **(0-4 marks)**	**[6]**	One explained well plus one other identified = 5 One explained well plus one other partially explained = 6 Candidates may offer reverse arguments if they described pattern of low/no risk in (a)(i). Rapid population growth means more people are trying to farm land which is already dry and not very fertile. This exhausts the soil and so eventually nothing will grow and the land becomes barren and desert-like. Rapid population growth leads to less fertile soil and no vegetation growth.

Question				Expected Answer	Mark	Rationale
	(b)		**Explain <u>two</u> impacts of climate on the characteristics of animals in hot arid/semi-arid environments.**	Indicative content: Impacts may be on adaptations of specific species. Physiological adaptations to lose heat (eg large ears), reduce water loss (eg uric acid) or to stay cool (light coloured skin). Behavioural adaptations to reduce water loss (eg hunt at night) or to stay cool (eg live in burrows out of direct sun) Impacts may also be on characteristics of populations eg boom and bust cycles due to variable climate, short breeding cycles due to limited period of favourable conditions, limited diversity due to short food chains and lack of food production in harsh climate. **Level 2:** Identifies two impacts and explains how they are related to the environmental conditions. **(5-6 marks)** **Level 1:** Identifies two impacts or explains one. Cause-effect links may be stated but not clearly explained. One explained well may reach the top of this level. **(0-4 marks)**	**[6]**	One explained well plus one other identified = 5 One explained well plus one other partially explained = 6 Accept impact of climate change. Some animals have large, thin ears. These provide a large surface area from which heat can be lost to help keep the animal cool in the extreme, high temperatures. They have large ears to lose heat.

Question				Expected Answer	Mark	Rationale
	(c)		**With reference to one or more hot arid/semi-arid environments, examine how water has shaped the landscape.**	Indicative content: Water is important, despite these areas being arid, as rainfall can be intense leading to rapid surface run-off and flash flooding. Also, previous wetter climatic conditions may have shaped the present landscape. Fluvial erosion and deposition are both relevant. Erosional include wadis and pediments, depositional landforms include alluvial fans and bajadas, salt pans/playas. Weathering processes breaking down rock forming scree/talus. Salinisation of soils leading to barren landscapes. **Level 3:** Uses a clearly identified example to describe the landscape/landforms and to explain the influence of water on its shaping. Cause-effect links are stated and clearly explained. Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. **(8-9 marks)** **Level 2:** Gives a clearly identified example with description of landscape/landforms provided. Some processes identified. Cause-effect links are stated but explanation may not be clear. Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. **(5-7 marks)**	**[9]**	Answer may relate to specific landforms or broader landscape characteristics of eg a canyon landscape. When the river flows out of the mountain area onto the lowland, it slows down and loses energy. This leads to deposition of the large amount of sediment being carried forming a cone-shaped accumulation called an alluvial fan. The river deposits sediment when it flows out onto the lowland area forming a cone-shaped alluvial fan.

Question				Expected Answer	Mark	Rationale
				Level 1: Limited or no example. Descriptive statement(s) about landscape/landform(s). There may be little or no reference to cause-effect links. Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology. Max 2 for landform or process names only. If no located example then top of level 1 Max. **(0-4 marks)**		There is a cone-shaped area of sediment called an alluvial fan.
				Total	**[25]**	

Question		Expected Answer	Mark	Rationale
Section B				
5	**With reference to one or more located examples, explain why successful river basin management requires an understanding of physical processes.**	Indicative content: Management may refer to flooding, conflicting land uses/human activities, development issues as well as broader basin management issues such as catchment hydrology. Physical processes include fluvial erosion/transportation/deposition, flooding, weathering and mass movement. Understanding of these processes should inform management planning in order to achieve success, which may be short-term or long-term. **AO1 Knowledge and understanding** **Level 3:** Detailed knowledge and understanding of physical processes and management strategies. Cause-effect links are clearly explained. There is effective use of detailed exemplification with processes being explicitly linked to management strategies. **(11–13 marks)** **Level 2:** Some knowledge and understanding of physical processes and management strategies. Cause-effect links are stated but not clearly explained. There is use of exemplification with some linkages made between processes and management, which may be implicit. **(7–10 marks)** **Level 1:** Limited knowledge and understanding of physical processes and management strategies. No cause-effect links are stated. There is limited exemplification of process-management linkages. If no located example then top of level 1 Max. **(0–6 marks)**	**[25]**	May refer to examples of places where processes were not understood and so management was ineffective as evidence that they do need to be understood.

Question		Expected Answer	Mark	Rationale
		AO2 Analysis and application **Level 3:** Clear analysis and application of knowledge and understanding of how and why process understanding results in successful management strategies. **(5 marks)** **Level 2:** Some analysis and application of knowledge and understanding of how and why process understanding results in successful management strategies. **(3–4 marks)** **Level 1:** Limited analysis and application of knowledge and understanding of how and why process understanding results in successful management strategies. **(0–2 marks)** **AO3 Skills and communication** **Level 3:** Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. Clear conclusion(s) are drawn. **(6–7 marks)** **Level 2:** Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. Conclusion(s) are attempted. **(4–5 marks)** **Level 1:** Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology. No conclusion(s) are attempted. **(0–3 marks)**		Reverse arguments may apply to lack of success. May qualify how success is judged, perhaps in terms of sustainability.
		Total	**[25]**	

Question		Expected Answer	Mark	Rationale
6	**With reference to one or more located examples, explain why successful coastal management requires an understanding of physical processes.**	Indicative content: Management may refer to coastal protection, ecosystems, conflicting land uses/human activities, development issues. Physical processes include coastal erosion/transportation/deposition, weathering and mass movement. Understanding of these processes should inform management planning in order to achieve success, which may be short-term or long-term. **AO1 Knowledge and understanding** **Level 3:** Detailed knowledge and understanding of physical processes and management strategies. Cause-effect links are clearly explained. There is effective use of detailed exemplification with processes being explicitly linked to management strategies. **(11–13 marks)** **Level 2:** Some knowledge and understanding of physical processes and management strategies. Cause-effect links are stated but not clearly explained. There is use of exemplification with some linkages made between processes and management which may be implicit. **(7–10 marks)** **Level 1:** Limited knowledge and understanding of physical processes and management strategies. No cause-effect links are stated. There is limited exemplification of process-management linkages. If no located example then top of level 1 Max. **(0–6 marks)**	**[25]**	May refer to examples of places where processes were not understood and so management was ineffective as evidence that they do need to be understood.

Question		Expected Answer	Mark	Rationale
		AO2 Analysis and application **Level 3:** Clear analysis and application of knowledge and understanding of how and why process understanding results in successful management strategies. **(5 marks)** **Level 2:** Some analysis and application of knowledge and understanding of how and why process understanding results in successful management strategies. **(3–4 marks)** **Level 1:** Limited analysis and application of knowledge and understanding of how and why process understanding results in successful management strategies. **(0–2 marks)** **AO3 Skills and communication** **Level 3:** Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. Clear conclusion(s) are drawn. **(6–7 marks)** **Level 2:** Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. Conclusion(s) are attempted. **(4–5 marks)** **Level 1:** Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology. No conclusion(s) are attempted. **(0–3 marks)**		Reverse arguments may apply to lack of success. May qualify how success is judged, perhaps in terms of sustainability.
		Total	**[25]**	

Question		Expected Answer	Mark	Rationale
7	**With reference to located examples, explain how cold environments can provide both opportunities and challenges for development.**	Indicative content: Opportunities include resource exploitation, including agriculture, recreation and tourism. Challenges include environmental constraints, costs/remoteness, and conflicts with indigenous populations. Relationships exist between the nature of the challenges and the desire/ability to overcome them in order for development to take place. This might reflect, for example, the value of resources and the technological advances enabling their exploitation. **AO1 Knowledge and understanding** **Level 3:** Detailed knowledge and understanding of challenges and opportunities in cold environments. Cause-effect links are clearly explained. There is effective use of detailed exemplification. **(11–13 marks)** **Level 2:** Some knowledge and understanding of challenges and opportunities in cold environments. Cause-effect links are stated but not clearly explained. There is use of exemplification. Max 7 if only challenges or only opportunities addressed. **(7–10 marks)** **Level 1:** Limited knowledge and understanding of challenges and/or opportunities in cold environments. No cause-effect links are stated. There is limited exemplification. If no located example then top of Level 1 Max. If only one located example then top of Level 2 Max. **(0–6 marks)**	**[25]**	May refer to the challenges of earlier mis-management but answers should explain why this is particularly challenging in cold environments eg because ecosystems are fragile, because rates of recovery from damage are slow in harsh climatic conditions.

Question		Expected Answer	Mark	Rationale
		AO2 Analysis and application **Level 3:** Clear analysis and application of knowledge and understanding of challenges and opportunities and their links to development. **(5 marks)** **Level 2:** Some analysis and application of knowledge and understanding of challenges and opportunities and their links to development. **(3–4 marks)** **Level 1:** Limited analysis and application of knowledge and understanding of challenges and opportunities and their links to development. **(0–2 marks)** **AO3 Skills and communication** **Level 3:** Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. Clear conclusion(s) are drawn. **(6–7 marks)** **Level 2:** Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. Conclusion(s) are attempted. **(4–5 marks)** **Level 1:** Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology. No conclusion(s) are attempted. **(0–3 marks)**		Likely to refer to conceptual ideas such as multiplier effect as an economic aspect of development; seasonal nature of tourist employment as a challenge.
		Total	**[25]**	

Question		Expected Answer	Mark	Rationale
8	**With reference to located examples, explain how hot arid/semi-arid environments can provide both opportunities and challenges for development.**	Indicative content: Opportunities include resource exploitation, including agriculture, recreation and tourism. Challenges include environmental constraints, costs/remoteness, and conflicts with indigenous populations. Relationships exist between the nature of the challenges and the desire/ability to overcome them in order for development to take place. This might reflect, for example, the value of resources and the technological advances enabling their exploitation. **AO1 Knowledge and understanding** **Level 3:** Detailed knowledge and understanding of challenges and opportunities in hot arid/semi-arid environments. Cause-effect links are clearly explained. There is effective use of detailed exemplification. **(11–13 marks)** **Level 2:** Some knowledge and understanding of challenges and opportunities in hot arid/semi-arid environments. Cause-effect links are stated but not clearly explained. There is use of exemplification. Max 7 if only challenges or only opportunities addressed. **(7–10 marks)** **Level 1:** Limited knowledge and understanding of challenges and/or opportunities in hot arid/semi-arid environments. No cause-effect links are stated. There is limited exemplification. If no located example then top of level 1 Max. If only one located example then top of Level 2 Max. **(0–6 marks)**	**[25]**	May refer to the challenges of earlier mis-management but answers should explain why this is particularly challenging in hot arid/semi-arid environments eg because ecosystems are fragile, because rates of recovery from damage are slow in harsh climatic conditions.

Question		Expected Answer	Mark	Rationale
		AO2 Analysis and application **Level 3:** Clear analysis and application of knowledge and understanding of challenges and opportunities and their links to development. **(5 marks)** **Level 2:** Some analysis and application of knowledge and understanding of challenges and opportunities and their links to development. **(3–4 marks)** **Level 1:** Limited analysis and application of knowledge and understanding of challenges and opportunities and their links to development. **(0–2 marks)** **AO3 Skills and communication** **Level 3:** Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. Clear conclusion(s) are drawn. **(6–7 marks)** **Level 2:** Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. Conclusion(s) are attempted. **(4–5 marks)** **Level 1:** Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology. No conclusion(s) are attempted. **(0–3 marks)**		Likely to refer to conceptual ideas such as multiplier effect as an economic aspect of development; seasonal nature of tourist employment as a challenge.
		Total	**[25]**	
		Paper Total	**[75]**	

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