OCR
RECOGNISING ACHIEVEMENT

GCE

Geography

Advanced GCE **F761**

Managing Physical Environments

Mark Scheme for June 2010

OCR (Oxford Cambridge and RSA) is a leading UK awarding body, providing a wide range of qualifications to meet the needs of pupils of all ages and abilities. OCR qualifications include AS/A Levels, Diplomas, GCSEs, OCR Nationals, Functional Skills, Key Skills, Entry Level qualifications, NVQs and vocational qualifications in areas such as IT, business, languages, teaching/training, administration and secretarial skills.

It is also responsible for developing new specifications to meet national requirements and the needs of students and teachers. OCR is a not-for-profit organisation; any surplus made is invested back into the establishment to help towards the development of qualifications and support which keep pace with the changing needs of today's society.

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by Examiners. It does not indicate the details of the discussions which took place at an Examiners' meeting before marking commenced.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

Any enquiries about publications should be addressed to:

OCR Publications
PO Box 5050
Annesley
NOTTINGHAM
NG15 0DL

Telephone: 0870 770 6622
Facsimile: 01223 552610
E-mail: publications@ocr.org.uk

Section A					
Question			**Expected Answer**	**Mark**	**Rationale**
1	**(a)**		**Study Fig. 1, a graph showing the estimated average monthly sediment load for a point on the River Wye.**		
		(i)	**Describe the pattern of average monthly sediment load shown in Fig. 1.** **Indicative content:** Highly variable, summer/August minimum, winter/ December maximum, variable rates of change, use of data as evidence. **Level 2:** Identifies general pattern and provides evidence. Recognises variation/identifies range or other higher level observation for max. **(3-4 marks)** **Level 1:** Monthly listing, with data. No pattern identified. No pattern identified. OR pattern identified but no evidence provided. **(0-2 marks)**	**[4]**	
		(ii)	**Explain <u>two</u> possible reasons for this pattern.** **Indicative content:** Main reason probably climatic, linked to higher rainfall in winter compared to summer and hence greater erosion and transportation capacity of river or evaporation in summer and hence lower volume and reduced ability to transport. Other reason likely to be variation in vegetation cover with the lack of cover in winter meaning soil is more easily eroded due to lack of roots to bind soil and reduced interception. Other reasons, such as human abstraction in summer and more weathering input in winter, may be offered, but must be temporal not spatial. **Level 2:** Identifies reasons. Causal links clearly explained. Good use of technical language. **(5-6 marks)** **Level 1:** Identifies at least one reason. Links may be stated rather than explained. Gaps in technical language. One explained well may reach the top of this level. **(0-4 marks)**	**[6]**	Do not double credit reverse arguments. One reason explained well plus one other reason stated = 5. One reason explained well plus one other reason partially explained = 6. Likely to mention available energy. More water=more sediment.

Question	Expected Answer	Mark	Rationale
(b)	**Show how human activities within river basins can increase the risk of flooding.** **Indicative content:** Reasons include creation of impermeable concrete/tarmac surfaces leading to increased surface run-off, removal of vegetation reducing interception and uptake levels leading to earlier soil saturation and increased surface run-off. Both result in higher peak/shorter lag time discharge response and hence greater flood risk. Other possible reasons include channelisation increasing risks downstream, bridge construction creating semi-dams, agrictultural activity and drainage. **Level 2:** Identifies at least two activities and explains the influence on flood risk. Links are fully explained with specific reference to water transfer processes. **(5-6 marks)** **Level 1:** Identifies valid activity(s). Link(s) may be stated but not fully explained with little/no reference to processes. **(0-4 marks)** One done well may reach the top of Level 1.	**[6]**	Do not allow explanations based on more people living on flood plains and so greater risks FROM flooding. Beware flooding behind dams to create reservoirs; may be relevant if linked to increased flood risk upstream One activity explained well plus one other activity stated = 5. One activity explained well plus one other activity partially explained = 6. Rapid/greater surface run-off likely to be a discriminator.

Question	Expected Answer	Mark	Rationale
(c)	**With reference to one or more located river basins, explain why differing land uses may conflict.**	**[9]**	
	Indicative content: Differing land uses may include industry, transport, residential, energy development, water supply, recreation and conservation. Conflicts exist due to potential incompatibility eg recreational sites negatively affected by pollution from industry.		Beware flooding based answers. Must relate to different land uses.
	Level 3: Uses well chosen example(s) to explain in some detail at least one specific conflict. Cause-effect links explicitly explained. Answer is well structured with almost faultless grammar and spelling. Geographical terminology is used accurately. **(8-9 marks)**		e.g. Conflict between conservation and industry as water pollution from effluent contaminates food chains and toxins are ingested by swans.
	Level 2: Clearly identified example(s) used to attempt to explain at least one specific conflict. Cause-effect links stated; conflicts maybe implied. Answers may have poor structure with some inaccurate grammar and spelling, and inaccurate use of geographical terminology. **(5-7 marks)**		e.g. Industry pollutes rivers with waste which harms the wildlife in the environment.
	Level 1: Limited/no use of example(s). Descriptive observations of human activities. No casual links established. Communication is basic with little structure and inaccurate grammar and spelling. Max 2 for a list of human activities with no reference to potential for conflict. If no located example(s) then top of level 1 Max. **(0-4 marks)**		e.g. Industries dump waste in the river
	Total	**[25]**	

Question			Expected Answer	Mark	Rationale
2	(a)		**Study Fig. 2, a graph showing variations in mean pebble size with distance from a cliff along a beach at La Malbaie, Quebec, Canada.**		
		(i)	**Describe the variations in mean pebble size with distance from the cliff in Fig. 2.** **Indicative content:** Decreasing size with increasing distances, non-linear pattern, weak trend, many anomalies. **Level 2:** Identifies general trend and provides evidence. Recognises anomaly, non-linear nature or other higher level observation for max. **(3-4 marks)** **Level 1:** Starts at one end and works along quoting figures. No trend identified. No pattern identified. OR pattern identified but no evidence provided. **(0-2 marks)** If no use of data then top of Level 1 Max.	**[4]**	

	(a)	(ii)	**Explain <u>two</u> possible reasons for these variations.** **Indicative content:** Main reason is longshore drift moving material along the spit from SW to NE. Smaller material is carried further as less energy is required. During movement particles are reduced in size by attrition. Movement may be the result of tidal/river current rather than wind/wave direction. Material weathered from the cliff is the likely source of the material. Geology may be relevant. Human interference may be relevant e.g. groyne construction, beach nourishment. **Level 2:** Identifies two reasons for the variations. Causal links clearly explained. Good use of technical language. **(5-6 marks)** **Level 1:** Identifies at least one reason. Links may be stated rather than explained. Gaps in technical language. One explained well may reach the top of this level. **(0-4 marks)**	**[6]**	Must be appropriate for the evidence from the graph. Answers relating to beach profile not are valid. One reason explained well plus one other reason stated = 5. One reason explained well plus one other reason partially explained = 6. e.g. Transported material is worn down by attrition as particles are carried in swash/backwash. e.g. Smaller material is carried further/more easily.
	(b)		**Show how hard engineering methods can protect coastlines from natural processes.** **Indicative content:** Methods include sea walls, groynes, gabions, revetments, rip rap and off-shore reef. Protection is achieved by providing greater resistance, reflecting or absorbing wave energy, preventing waves from reaching vulnerable coastline. **Level 2:** Identifies at least two methods and explains their 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]**	e.g. Curved sea walls reflect energy of waves back into water, rip rap absorbs energy of waves as water is slowed down as it passes through gaps. e.g. Groynes stop lsd; sea walls are in front of the cliff to stop waves

Question			Expected Answer	Mark	Rationale
	(c)		**With reference to one or more located coastal areas, explain why conflicts may result from the growth and development of human activities.**	[9]	
			Indicative content: Differing activities may include industry, transport, residential, energy development, recreation and conservation. Construction of coastal protection may also be relevant. Conflicts exist due to potential incompatibility eg commercial shipping in ports with recreational water sports causing risk of accidents.		
			Level 3: Uses well chosen example(s) to explain at least two specific conflicts. Links explicitly explained. Answer is well structured with almost faultless grammar and spelling. Geographical terminology is used accurately. **(8-9 marks)**		e.g. Conflict between conservation and industry as water pollution from effluent contaminates food chains and is ingested by mackerel.
			Level 2: Clearly identified example(s) used to explain at least one specific conflict. Links stated; conflicts implied. Answers may have poor structure with some inaccurate grammar and spelling, and inaccurate use and inaccurate use of geographical terminology. **(5-7 marks)**		e.g. Industry pollutes the sea with waste which harms the wildlife in the environment.
			Level 1: Limited/no use of example(s). Descriptive observations of human activities. No links established. Communication is basic with little structure and inaccurate grammar and spelling. Max 2 for a list of human activities with no reference to potential for conflict. If no located example(s) then top of level 1 Max. **(0-4 marks)**		e.g. Industries dump waste in sea.
			Total	**[25]**	

Question			Expected Answer	Mark	Rationale
3	(a)		**Study Fig. 3, a map of the present-day distribution of ice masses.**		
		(i)	**Describe the distribution of ice masses shown in Fig. 3.** **Indicative content:** Major areas are ice sheets at high latitude eg Greenland, Antarctica. Other smaller areas are ice caps and valley glaciers at lower latitude eg Andes, Himalayas. **Level 2:** Clear identification of both aspects of distribution. Uses evidence from named locations. **(3-4 marks)** **Level 1:** Identifies at least one aspect of the distribution, or provides generic description. May not use evidence of named locations or specify latitude. **(0-2 marks)**	**[4]**	Higher altitude or coastal margins are valid alternatives to lower latitude for valley glaciers/ice caps.
		(ii)	**Explain how climatic conditions lead to the formation of ice masses.** **Indicative content:** Key is that temperatures are low enough in the short "summer period" so that winter snowfall does not all melt. This remains in place so that the following year's snowfall falls on top and leads to formation of ice which accumulates over time. **Level 2:** Accurate description of environmental conditions linked to the accumulation of snow. Must be from one year to the next for max. **(5-6 marks)** **Level 1:** Relevant description of climate, perhaps relating to sub-zero temperatures. May give reasons for low temperatures and/or snowfall. **(0-4 marks)**	**[6]**	References to the onset of glacial periods, "climatic wobbles" may be relevant.

Question	Expected Answer	Mark	Rationale
(b)	**Outline <u>two</u> ways in which cold environments can be exploited for short-term gains.** **Indicative content:** Ways include resource exploitation and over-development of tourism. The key is that the short-term nature of the approach means that the use is unsustainable. **Level 2:** Identifies two ways and outlines their short-term or unsustainable nature. **(5-6 marks)** **Level 1:** Identifies valid way(s). Outline of short-term or unsustainable nature not provided. One outlined well may reach the top of this level. **(0-4 marks)**	**[6]**	Scientific research unlikely to be short-term. One way outlined well plus one other way stated = 5. One way outlined well plus one other way partially outlined = 6. e.g. Oil can be extracted but leakages can cause damage to the environment OR oil is a non-renewable resource and so can be used up quickly if extracted at a high rate. e.g. Oil can be extracted which provides jobs which benefits the economy.

Question			Expected Answer	Mark	Rationale
	(c)		**With reference to one or more located examples, explain how ice produces distinctive landforms in cold environments.**	**[9]**	
			Indicative content: Glacial erosion and deposition are both relevant. Cirques, arêtes, U-shaped valleys/fjords, waterfalls and moraines are the landforms detailed in the specification. Pyramidal peaks, truncated spurs, hanging valleys, roche moutonnée, erratics, scree and drumlins are also appropriate. Periglacial landforms such as pingo also acceptable.		Role of ice is the key. Weathering and frost heave processes may be appropriate if the role of ice is explicit.
			Level 3: Uses well-chosen example(s) to explain the role of ice on the production of at least two landforms. Links explicitly explained. Answer is well structured with almost faultless grammar and spelling. Geographical terminology, especially regarding process mechanisms, is used accurately. **(8-9 marks)**		e.g. Rotational movement of ice through a hollow leads to plucking which is…., and this steepens the back wall.
			Level 2: Clearly identified example(s) used to attempt explanation of the role of ice on landform production. Links stated. Answers may have poor structure with some inaccurate grammar and spelling, and inaccurate use of geographical terminology. Process references may be generic. One landform explained well may reach the top of this level. **(5-7 marks)**		e.g. Ice moves through a hollow and deepens it by plucking and abrasion OR ice erodes the corrie by plucking which is……
			Level 1: Limited/no use of example(s). Descriptive statement(s) about landforms and/or processes. No links established. Communication is basic with little structure and inaccurate grammar and spelling. Max 2 for list of landforms or processes If no located example then top of level 1 Max. **(0-4 marks)**		e.g. Corries are bowl shaped depressions formed by the action of moving ice OR corries are formed by erosion by ice.
			Total	**[25]**	

Question			Expected Answer	Mark	Rationale
4	(a)		**Study Fig. 4, a map of the present-day distribution of hot arid and semi-arid environments.**		
		(i)	**Describe the distribution of hot arid and semi-arid environments shown in Fig. 4.** **Indicative content:** Mainly found between 20 and 40 degrees N and S, most are continental, semi-arid lie around arid. Anomalies of those at lower latitudes eg Somali as well as some more coastal eg Namib. **Level 2:** Clear description of arid/semi-arid differences. Recognises anomalies or general distribution. Uses egs as evidence. **(3-4 marks)** **Level 1:** Basic description of general distribution. May provide long list of examples. Lacks anomalies/ differences. **(0-2 marks)**	**[4]**	
		(ii)	**What are the differences between the climatic characteristics of hot arid and semi-arid environments?** **Indicative content:** Arid = Precipitation 100-300 mm per annum. Extreme temperatures, unreliable rainfall, high diurnal temp range, little cloud cover. Semi-arid = Precipitation 300-600 mm per annum. High temperatures, variable rainfall, more cloud cover. **Level 2:** Accurate description of both types with at least two differences clearly evident. Use of data likely. **(5-6 marks)** **Level 1:** Basic description, probably lacking accurate data. Difference(s) may not be clearly evident. **(0-4 marks)**	**[6]**	May refer to variability of rainfall and temperature range. May refer to P:PET Likely to be limited to rainfall and temperature.

Question			Expected Answer	Mark	Rationale
	(b)		**Outline <u>two</u> ways in which hot arid/semi-arid environments can be exploited for short-term gains.** **Indicative content:** Ways include resource exploitation, irrigation, overgrazing and over-development of tourism. The key is that the short-term nature of the approach means that the use is unsustainable. **Level 2:** Identifies two ways and outlines their short-term or unsustainable nature. **(5-6 marks)** **Level 1:** Identifies valid way(s). Outline of short-term or unsustainable nature not provided. One outlined well may reach the top of this level. **(0-4 marks)**	**[6]**	One way outlined well plus one other way stated = 5. One way outlined well plus one other way partially outlined = 6. e.g. Tourism can be developed which provides jobs in tertiary sector, but off-road vehicles crush vegetation and cause damage to the environment OR tourism employment may only be seasonal. e.g. Tourism can be developed which provides jobs in tertiary sector and helps the multiplier effect.

	(c)		**With reference to one or more located examples, explain how water produces distinctive landforms in hot arid/semi-arid environments.** **Indicative content:** Fluvial erosion and deposition, in past and present climatic regimes, are both relevant. Canyons and wadis are key landforms. Bajadas/fans, pediments and salt pans (playas) are also mentioned in the specification. Water-based weathering processes also acceptable. **Level 3:** Uses well-chosen example(s) to explain the role of water in the production of at least two landforms. Links explicitly explained. Answer is well structured with almost faultless grammar and spelling. Geographical terminology is used accurately, especially in relation to process mechanisms. **(8-9 marks)** **Level 2:** Clearly identified example(s) used to attempt explanation of the role of water on landform production. Links stated. Answers may have poor structure with some inaccurate grammar and spelling, and inaccurate use of geographical terminology. Process references are generic. One landform explained well may reach the top of this level. **(5-7 marks)** **Level 1:** Limited/no use of example(s). Descriptive statement(s) about landforms and/or processes. No links established. Communication is basic with little structure and inaccurate grammar and spelling. Max 2 for lists of landforms or processes. If no located example then top of level 1 Max. **(0-4 marks)**	**[9]**	e.g. During storms water runs-off into channels called wadis. These are deepened by erosion using processes such as abrasion, which is….., as there is high energy and plenty of sediment available. e.g. In flash floods there is rapid surface run-off into previously dry channels called wadis and they are deepened by abrasion OR rivers erode by processes such as abrasion which is…….. e.g. Wadis are channels that are dry for part of the year but have water in them when it rains OR water can erode in times of high rainfall.
			Total	**[25]**	

Section B					
Question			Expected Answer	Mark	Rationale
5			**With reference to one or more river basins, examine the factors affecting the development of landforms of fluvial deposition.**	**[25]**	
			Indicative content: Factors include slope angle, climate, sea level change, stream energy and sediment availability. Human factors, such as construction of wing dykes, may also be relevant. These factors act through the depositional processes to affect landform development. This may include initial formation and subsequent modification. Landforms include slip-off slopes, point bars, mid-channel bars, levees, deltas and flood plains. Answers should include description, explanation and comment, perhaps at the top end, on the importance of the factors concerned and/or their inter-relationships.		An acceptable alternative interpretation is to focus on economic development of landforms. Factors/landforms rules in levels still apply.
			AO1 Knowledge and understanding		
			Level 3: Detailed knowledge and understanding of at least two factors and two landforms. Cause and effect is well understood and there is effective use of detailed exemplification with processes explicitly linking factors and landforms. **(11-13 marks)**		Factor-Process-Landform relationships clear. Deposition explained via references to loss of energy.
			Level 2: Some knowledge and understanding of at least two factors and landforms or more detailed knowledge and understanding of one. Cause and effect is understood and there is use of exemplification with some linkages made between factors and landforms, perhaps via generic deposition references. **(7-10 marks)**		Two landforms and one factor (in detail) or one landform (in detail) and two factors. Deposition explained via references to loss of velocity or volume.
			Level 1: Limited knowledge and understanding of at least one factor. Cause and effect is not well understood and there is limited exemplification of linkages. If no located example then top of level 1 Max. **(0-6 marks)**		May focus on erosional landforms or not relate to landforms at all.

Question			Expected Answer	Mark	Rationale
			AO2 Analysis and application **Level 3:** Clear analysis and application of knowledge of the factors affecting the development of landforms of fluvial deposition. **(5 marks)** **Level 2:** Some analysis and application of knowledge of the factors affecting the development of landforms of fluvial deposition. **(3-4 marks)** **Level 1:** Limited analysis and application of knowledge of the factors affecting the development of landforms of fluvial deposition. **(0-2 marks)** **AO3 Skills and communication** **Level 3:** The answer is well organised, with accurate spelling, punctuation and grammar. Geographical terminology is used appropriately. Clear conclusion(s) are drawn. **(6-7 marks)** **Level 2:** The answer has some organisation, with generally accurate spelling, punctuation and grammar. Some use of appropriate geographical terminology. Conclusion(s) are attempted. **(4-5 marks)** **Level 1:** The answer has little or no organisation, with inaccuracies in spelling, punctuation and grammar. Limited use of appropriate geographical terminology. No conclusion(s) are attempted. **(0-3 marks)**		
			Total	**[25]**	

Question			Expected Answer	Mark	Rationale
6			**With reference to one or more coastlines, examine the factors affecting the development of landforms of coastal deposition.**	**[25]**	
			Indicative content: Factors include wave type/characteristics, beach profile, and sea-level change. Human factors, such as groyne construction, may also be appropriate. These factors act through the depositional processes to affect landform development. This may include initial formation and subsequent modification. Landforms include beaches, spits, bars, tombolos, cuspate forelands, deltas, salt marshes and sand dunes. Answers should include description, explanation and comment, perhaps at the top end, on the importance of the factors concerned and/or their inter-relationships.		An acceptable alternative interpretation is to focus on economic development of landforms. Factors/landforms rules in levels still apply.
			AO1 Knowledge and understanding **Level 3:** Detailed knowledge and understanding of at least two factors and two landforms. Cause and effect is well understood and there is effective use of detailed exemplification with processes explicitly linking factors and landforms. **(11-13 marks)**		Factor-Process-Landform relationships clear. Deposition explained via references to loss of energy.
			Level 2: Some knowledge and understanding of at least two factors and landforms or more detailed knowledge and understanding of one. Cause and effect is understood and there is use of exemplification with some linkages made between factors and landforms, perhaps via generic deposition references. **(7-10 marks)**		Two landforms and one factor (in detail) or one landform (in detail) and two factors. Deposition explained via references to loss of velocity or volume.
			Level 1: Limited knowledge and understanding of at least one factor. Cause and effect is not well understood and there is limited exemplification of linkages. If no located example then top of level 1 Max. **(0-6 marks)**		May focus on erosional landforms or not relate to landforms at all.

Question			Expected Answer	Mark	Rationale
			AO2 Analysis and application **Level 3:** Clear analysis and application of knowledge of the factors affecting the development of landforms of coastal deposition. **(5 marks)** **Level 2:** Some analysis and application of knowledge of the factors affecting the development of landforms of coastal deposition. **(3-4 marks)** **Level 1:** Limited analysis and application of knowledge of the factors affecting the development of landforms of coastal deposition. **(0-2 marks)** **AO3 Skills and communication** **Level 3:** The answer is well organised, with accurate spelling, punctuation and grammar. Geographical terminology is used appropriately. Clear conclusion(s) are drawn. **(6-7 marks)** **Level 2:** The answer has some organisation, with generally accurate spelling, punctuation and grammar. Some use of appropriate geographical terminology. Conclusion(s) are attempted. **(4-5 marks)** **Level 1:** The answer has little or no organisation, with inaccuracies in spelling, punctuation and grammar. Limited use of appropriate geographical terminology. No conclusion(s) are attempted. **(0-3 marks)**		
			Total	**[25]**	

Question			Expected Answer	Mark	Rationale
7			**With reference to located examples, explain how human and physical factors make ecosystems in cold environments vulnerable to damage.**	**[25]**	
			Indicative content: The focus of the question is on ecosystems (flora, fauna and soils) rather than the whole environment. Human factors include activities such as agriculture, resource extraction and tourism. Physical factors include climate and relief. The thrust of the answer should be that these ecosystems are fragile due to the harsh conditions and easily damaged by human activities. The answer may refer to alpine and/or tundra ecosystems.		
			AO1 Knowledge and understanding		
			Level 3: Detailed knowledge and understanding of the impact of physical factors and human factors. Cause and effect is well understood and there is effective use of detailed exemplification of factor-ecosystem linkages. The concept of fragility is understood and applied. **(11-13 marks)**		e.g. the long periods of very low, sub-zero temperatures result in a short thermal growing season of 3-4 months and so slow growth and recovery rates after human damage by trampling.
			Level 2: Some knowledge and understanding of the impact of at least one example of both physical and human factors. Cause and effect is understood and there is use of exemplification to illustrate the factor -ecosystem linkages. The concept of fragility may be stated, but not necessarily applied. **(7-10 marks)**		e.g. cold temperatures make it hard for plants to grow and so when they are damaged by humans they take a long time to grow back.
			Level 1: Limited knowledge and understanding of impact of factors. May concentrate on physical or human. Cause and effect is not well understood and there is limited exemplification of factor-ecosystem linkages. No reference to fragility. **(0-6 marks)**		e.g. it is very cold for most of the year and so not many plants are able to grow.
			If no located example then top of Level 1 Max. If only one located example then top of Level 2 Max.		

Question			Expected Answer	Mark	Rationale
			AO2 Analysis and application **Level 3:** Clear analysis and application of how human and physical factors make ecosystems in cold environments vulnerable to damage. **(5 marks)** **Level 2:** Some analysis and application of how human and physical factors make ecosystems in cold environments vulnerable to damage. **(3-4 marks)** **Level 1:** Limited analysis and application of how human and physical factors make ecosystems in cold environments vulnerable to damage. **(0-2 marks)** **AO3 Skills and communication** **Level 3:** The answer is well organised, with accurate spelling, punctuation and grammar. Geographical terminology is used appropriately. Clear conclusion(s) are drawn. **(6-7 marks)** **Level 2:** The answer has some organisation, with generally accurate spelling, punctuation and grammar. Some use of appropriate geographical terminology. Conclusion(s) are attempted. **(4-5 marks)** **Level 1:** The answer has little or no organisation, with inaccuracies in spelling, punctuation and grammar. Limited use of appropriate geographical terminology. No conclusion(s) are attempted. **(0-3 marks)**		
			Total	**[25]**	

Question			Expected Answer	Mark	Rationale
8			**With reference to located examples, explain how human and physical factors make ecosystems in hot arid/semi-arid environments vulnerable to damage.**	**[25]**	
			Indicative content: The focus of the question is on ecosystems (flora, fauna and soils) rather than the whole environment. Human factors include activities such as agriculture, resource extraction and tourism. Physical factors include climate and relief. The thrust of the answer should be that these ecosystems are fragile due to the harsh conditions and easily damaged by human activities. The answer may refer to semi-arid and/or arid ecosystems.		
			AO1 Knowledge and understanding		
			Level 3: Detailed knowledge and understanding of the impact of physical factors and human factors. Cause and effect is well understood and there is effective use of detailed exemplification of factor-ecosystem linkages. The concept of fragility is understood and applied. **(11-13 marks)**		e.g. the low precipitation totals and high evaporation rates mean that limited water is available for plants and so slow growth and recovery rates after human damage by trampling.
			Level 2: Some knowledge and understanding of the impact of at least one example of both physical and human factors. Cause and effect is understood and there is use of exemplification to illustrate the factor -ecosystem linkages. The concept of fragility may be stated, but not necessarily applied. **(7-10 marks)**		e.g. lack of rainfall makes it hard for plants to grow and so when they are damaged by humans they take a long time to grow back.
			Level 1: Limited knowledge and understanding of impact of factors. May concentrate on physical or human. Cause and effect is not well understood and there is limited exemplification of factor-ecosystem linkages. No reference to fragility. **(0-6 marks)**		e.g. it is very dry for most of the year and so not many plants are able to grow.
			If no located example then top of Level 1 Max. If only one located example then top of Level 2 Max.		

Question			Expected Answer	Mark	Rationale
			AO2 Analysis and application **Level 3:** Clear analysis and application of knowledge of how human and physical factors make ecosystems in hot arid/semi-arid environments vulnerable to damage. **(5 marks)** **Level 2:** Some analysis and application of knowledge of how human and physical factors make ecosystems in hot arid/semi-arid environments vulnerable to damage. **(3-4 marks)** **Level 1:** Limited analysis and application of how human and physical factors make ecosystems in hot arid/semi-arid environments vulnerable to damage. **(0-2 marks)** **AO3 Skills and communication** **Level 3:** The answer is well organised, with accurate spelling, punctuation and grammar. Geographical terminology is used appropriately. Clear conclusion(s) are drawn. **(6-7 marks)** **Level 2:** The answer has some organisation, with generally accurate spelling, punctuation and grammar. Some use of appropriate geographical terminology. Conclusion(s) are attempted. **(4-5 marks)** **Level 1:** The answer has little or no organisation, with inaccuracies in spelling, punctuation and grammar. Limited use of appropriate geographical terminology. No conclusion(s) are attempted. **(0-3 marks)**		
			Total	**[25]**	

OCR (Oxford Cambridge and RSA Examinations)
1 Hills Road
Cambridge
CB1 2EU

OCR Customer Contact Centre

14 – 19 Qualifications (General)
Telephone: 01223 553998
Facsimile: 01223 552627
Email: general.qualifications@ocr.org.uk

www.ocr.org.uk

For staff training purposes and as part of our quality assurance programme your call may be recorded or monitored

Oxford Cambridge and RSA Examinations
is a Company Limited by Guarantee
Registered in England
Registered Office; 1 Hills Road, Cambridge, CB1 2EU
Registered Company Number: 3484466
OCR is an exempt Charity

OCR (Oxford Cambridge and RSA Examinations)
Head office
Telephone: 01223 552552
Facsimile: 01223 552553