

GCE

Geography

Advanced Subsidiary GCE

Unit F761: Managing Physical Environments

Mark Scheme for June 2012

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Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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Annotations used in the detailed Mark Scheme

Annotation	Meaning
✓	Correct point (only to be used in the Standardisation sample and on point-marked questions)
*	Omission mark. Further development needed, missing point or link between points.
-5	Level one – to be used on the final, 9 mark part of Section A questions only.
12	Level two – to be used on the final, 9 mark part of Section A questions only.
13	Level three – to be used on the final, 9 mark part of Section A questions only.
?	Unclear, inaccurate, dubious validity.
IRRL	Irrelevant, a significant amount of material that does not answer the question
N-	No example(s) used or provided.
R	Rubric Error (place at start of Question not being counted)
[]	Highlighting an issue eg irrelevant paragraph. Use in conjunction with another stamp eg or
SEEN	Point has been seen and noted

Q	uesti	on	Answer	Marks	Guidance		
					Content	Levels of Response	
1	(a)	(i)	Steep relief, (relief) rainfall, confluence of rivers, lack of vegetation, spring tides, high drainage density, snowmelt, gentle long profile, flat floodplain/low lying land at risk, circular basin shape.	4	The outline should provide some detail of the factor or how it influences flooding. The outline may be a link between factors.	Level 2 [3-4 marks]: Identifies two factors and provides clear outline of each for max. Level 1 [0-2 marks]: Identifies valid factors(s). One outlined well may reach the top of Level 1.	
		(ii)	Urbanisation = concrete and tarmac surfaces are impermeable and promote rapid surface run-off and leading to bankfull capacity being exceeded. Building on the floodplain = putting more people at risk. Deforestation = reduces interception, reduced uptake of water from soil through roots, increasing rapid surface run-off. Bridges = create semi-dams which cause water to back up in the channel. Drainage = increases rate of water transfer from upland areas to towns below.	6	Only two factors are required. Clear detail of the process(es) should be expected. Some credit should be given for each factor identified. The influence of the factor does not necessarily have to be causal.	Level 2 [5-6 marks]: Identifies two factors and provides clear explanation. Process detail, such as interception, run-off, and infiltration expected. Level 1 [0-4 marks]: Identifies valid factors(s). Explanation weak/limited with a lack of process detail. One explained well may reach the top of Level 1.	

Question	Answer	Marks	Guidance	
			Content	Levels of Response
(b)	Conflicts include pollution from agricultural/industrial areas damaging habitats/food chains causing resentment in conservation areas. Also relevant are conflicts over different water uses, such as irrigation in agricultural areas and demand for domestic water supply in settlements. Use of water for fishing also relevant. Conflicts between those increasing flood risk eg urbanisation, and those suffering from flooding eg farming. Conflicts resulting from management e.g. dam construction.	6	An outline is required. Credit any valid conflict. Beware answers referring to conflicts between the same land uses, eg demand for water in two settlements. The same pair of land uses may conflict in different ways. Activities/land uses may be a blurred distinction.	Level 2 [5-6 marks]: Identifies and outlines two different conflicts between appropriate land uses. Level 1 [0-4 marks]: Identifies different land use(s) but cause of conflict between them is not clearly outlined. One outlined well may reach the top of Level 1.

Question	Answer	Marks	Guidance		
			Content	Levels of Response	
(c)	Management strategies include hard engineering approaches, such as dams, levees, overflow and diversion channels as well as soft engineering solutions such as afforestation, creation of washlands and education. Resolution may be achieved by prevention, prediction and protection. Issues include potential social, economic and environmental impacts.	9	Issues may be related to different impacts, or different places. Links may relate to reducing flood risk or management of different flood risk issues.	Level 3 [8-9 marks]: Uses well chosen example(s) to describe the management used. Cause-effect links are stated and clearly explained. Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. Level 2 [5-7 marks]: Clearly identified example(s) used to describe the management used. Cause-effect links are stated but not clearly explained. Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. Level 1 [0-4 marks]: Limited/no example. Descriptive observations of management used. Cause-effect links are limited or absent. Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology. If no located example(s) then top of Level 1 Max. Max 2 for list of methods.	

Qι	ıesti	on	Answer	Marks		Guidance
					Content	Levels of Response
2	(a)	(i)	Strong winds, long fetch, weak geology, oblique angle of approach, steep offshore zone, destructive waves. Risk of flooding of low lying land and issues resulting from longshore drift are relevant. Environmental protection may also be relevant.	4	The outline should provide some detail of the factor or how it influences erosion/flooding. The outline may be a link between factors.	Level 2 [3-4 marks]: Identifies two factors and provides clear outline of each for max. Level 1 [0-2 marks]: Identifies valid factors(s). One outlined well may reach the top of Level 1.
		(ii)	Groyne = sediment being moved by longshore drift is trapped, cutting off supply to the high erosion area. The lack of a beach means wave energy is concentrated on the cliff. Building on the cliff top = adds weight increasing pressure on the cliff leading to mass movement and erosion of debris at toe. Loss of habitats may also be relevant. Dredging of offshore sediments = increases angle of offshore zone, reducing friction to wave base and allowing waves to break on coast rather than off-shore. Human use of coastline needs protection eg the coast road, hotels, caravan site due to economic value.	6	Only two activities are required. Clear detail of the need should be expected. May refer to value of land/activities, people at risk rather than increased rates of erosion/flooding. Some credit should be given for each activity identified. The influence of the activity does not necessarily have to be causing erosion.	Level 2 [5-6 marks]: Identifies two activities and provides clear explanation of need. Level 1 [0-4 marks]: Identifies valid activity(ies). Explanation weak/limited with a lack of detail of need. One explained well may reach the top of Level 1.

Question	Answer	Marks		Guidance
			Content	Levels of Response
(b)	Conflicts include pollution from agricultural/industrial/urban areas damaging habitats/food chains causing resentment in conservation areas. Also relevant are conflicts over different water uses, such as leisure/recreation with commercial shipping. Conflicts between management e.g. sea defences and other land uses, possibly downdrift.	6	An outline is required. Credit any valid conflict. Beware answers referring to conflicts between the same activities, eg too many pleasure craft in one area. The same pair of activities may conflict in different ways. Activities/land uses may be a blurred distinction.	Level 2 [5-6 marks]: Identifies and outlines two different conflicts between appropriate activities. Level 1 [0-4 marks]: Identifies different activity(ies) but cause of conflict between them is not clearly outlined. One outlined well may reach the top of Level 1.

Question	Answer	Marks	Marks Guidance			
			Content	Levels of Response		
(c)	Issues may include overdevelopment, attraction of migrants, pollution, rising land/property prices. Resolution may be achieved by planning policies, land use zoning, education, and environmental protection. Management strategies may include hard/soft engineering for protection of developed areas.	9	Issues may be related to different types of development or different places. Links may relate to managing coastal erosion, flooding or environmental damage.	Level 3 [8-9 marks]: Uses well chosen example(s) to describe the management used. Cause-effect links are stated and clearly explained. Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. Level 2 [5-7 marks]: Clearly identified example(s) used to describe the management used. Cause-effect links are stated but not clearly explained. Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. Level 1 [0-4 marks]: Limited/no example. Descriptive observations of management used. Cause-effect links are limited or absent. Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology. If no located example(s) then top of Level 1 Max. Max 2 for list of methods.		

Q	uesti	on	Answer	Marks		Guidance	
					Content Levels of Response		
3	(a)		Snow cover, low temperatures, lack of liquid water availability, no/limited vegetation cover, high relief/thin air, steep slopes, strong winds, lack of shelter.	4	The outline should provide some detail of the evidence or how it influences animals. The outline may be a link between evidence. A lack of animals alone is not evidence.	Level 2 [3-4 marks]: At least two pieces of evidence identified and outline of each for max. Level 1 [0-2 marks]: Identifies valid evidence. One piece of evidence outlined well may reach the top of Level 1.	
	(b)		Adaptations include: thick fur, white coloration, short ears/tails, migration, hibernation, large pads/feet, boom-bust cycles, high reproduction rates.	6	Credit valid alternatives. Should be linked to conditions. Named species not required. Annotated diagrams may be used.	Level 2 [5-6 marks]: Two adaptations well explained and clearly linked to cold environment conditions. Level 1 [0-4 marks]: Two adaptations partially explained with weak or incomplete links to cold environment conditions. One explained well may reach the top of Level 1.	
	(c)		Factors include geology, rate of ice movement, amount of debris and shape of debris, climate, relief, weakening of rock by weathering.	6	Credit should be awarded for identification of factor(s).	Level 2 [5-6 marks]: Identifies two factors and explains how they influence erosion mechanisms such as plucking and abrasion. Level 1 [0-4 marks]: Identifies valid factor(s). Factor(s) may be described but not fully explained with little/no reference to erosion, or generic erosion only. One explained well may reach the top of Level 1.	

Question	Answer	Marks	Guidance		
			Content	Levels of Response	
(d)	Challenges include climate, avalanches, fragile ecosystems, ground conditions (permafrost/active layer), costs, remoteness and conflicts with indigenous populations. Rapid population growth, unskilled workforce, poverty/lack of market also relevant.	9	Credit answers that focus on impacts resulting from development if linked to the challenging characteristic of the environment.	Level 3 [8-9 marks]: Uses well chosen example(s) to accurately identify at least two challenges. Cause-effect links are stated and clearly explained with explicit reference to development. Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. Level 2 [5-7 marks]: Clearly identified example(s) used to describe at least two challenges. Cause-effect links are stated but not clearly explained with references to development likely to be implicit. Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology Level 1 [0-4 marks]: Limited/no example. Descriptive observations of challenge(s). Cause-effect links are limited or absent and development is not discussed. Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology. If no located example(s) then top of Level 1 Max. Answers that focus on impacts resulting from development NOT linked to the challenging characteristic of the environment, top of Level 1 Max. Max 2 for list of challenges.	

Q	uesti	on	Answer	Marks		Guidance
					Content	Levels of Response
4	(a)		High temperatures, dry/lack of water, lack of vegetation, strong winds, flash floods/intense rainfall, lack of shade/shelter, diurnal temperature range, high evapotranspiration rates.	4	The outline should provide some detail of the evidence or how it influences animals. The outline may be a link between evidence. A lack of animals alone is not evidence.	Level 2 [3-4 marks]: At least two pieces of evidence identified and outline of each for max. Level 1 [0-2 marks]: Identifies valid evidence. One piece of evidence outlined well may reach the top of Level 1.
	(b)		Adaptations include: eye lashes, large pads/feet, pale skin, colouration, licking of coats, reducing contact with ground, food/water storage, hair, small size, large ears, concentrated urine, migration, hibernation, nocturnal movement, boom-bust cycles, high reproduction rates.	6	Credit valid alternatives. Should be linked to conditions. Named species not required. Annotated diagrams may be used.	Level 2 [5-6 marks]: Two adaptations well explained and clearly linked to hot arid environment conditions. Level 1 [0-4 marks]: Two adaptations partially explained with weak or incomplete links to hot arid environment conditions. One explained well may reach the top of Level 1.
	(c)		Factors include water velocity, rainfall regime, exogenic and ephemeral rivers, acidity of rainfall, geology, vegetation and available load, weakening of rock by weathering, human factors such as water abstraction.	6	Credit should be awarded for identification of factor(s). Full credit available for fluvial factors not specific to these environments.	Level 2 [5-6 marks]: Identifies two factors and explains how they influence specific erosion mechanisms such as abrasion and hydraulic action. Level 1 [0-4 marks]: Identifies valid factor(s). Factor(s) may be described but not fully explained with little/no reference to erosion, or generic erosion only. One explained well may reach the top of Level 1.

Question	Answer	Marks	Guidance		
			Content	Levels of Response	
(d)	Challenges include environmental constraints, costs, remoteness and conflicts with indigenous populations. Rapid population growth, unskilled workforce, poverty/lack of market also relevant.		Credit answers that focus on impacts resulting from development if linked to the challenging characteristic of the environment.	Level 3 [8-9 marks]: Uses well chosen example(s) to accurately identify at least two challenges. Cause-effect links are stated and clearly explained with explicit reference to development. Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology Level 2 [5-7 marks]: Clearly identified example(s) provided to describe at least two challenges. Cause-effect links are stated but not clearly explained with references to development likely to be implicit. Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. Level 1 [0-4 marks]: Limited/no example. Descriptive observations of challenge(s). Cause-effect links are limited or absent and development is not discussed. Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology If no located example(s) then top of Level 1 Max. Answers that focus on impacts resulting from development NOT linked to the challenging characteristic of the environment, top of Level 1 Max. Max 2 for list of challenges.	

Question	Answer	Marks		Guidance
			Content	Levels of Response
5	Factors include slope angle, climate, sea level change, rock type, structure, aspect. Human factors, such as construction of flood defences, may also be relevant. These factors act through the erosional processes to affect landform development. This may include initial formation and subsequent modification. Landforms include waterfalls, rapids, pot holes, v shaped valleys, interlocking spurs, river cliffs and ox bow lakes. Answers might include description, explanation and comment, perhaps at the top end, on the importance of the factors concerned and/or their inter-relationships.	25	Factors influencing weathering and mass movement processes may also be relevant if linked to appropriate erosional landforms. Credit answers relating to the role of erosion in the formation of meanders/ox bow lakes/floodplains.	Level 3 [11-13 marks]: Detailed knowledge and understanding of at least two factors, explicitly addressed, and two landforms. Cause-effect links are clearly explained and there is effective use of detailed exemplification with processes explicitly linking factors and landforms Level 2 [7-10 marks]: Some knowledge and understanding of at least two factors, although maybe implicit, and landforms or more detailed knowledge and understanding of one. Cause-effect links are stated but not clearly explained and there is use of exemplification with some linkages made between factors and landforms, perhaps via generic erosion references. Level 1 [0-6 marks]: Limited knowledge and understanding of at least one factor and/or landform. Cause-effect links are limited or absent. If no located example then top of Level 1 Max.

Question Answer M		Marks		Guidance	
			Content	Levels of Response	
			Application: focus of the answer is clearly on the factors themselves. Analysis: comments on the factors eg relative importance, role of both physical and human, interconnection, spatial and temporal variability.	AO2 Analysis and application Level 3 [5 marks]: Clear analysis and application of knowledge of the factors affecting the development of landforms of fluvial erosion. Level 2 [3-4 marks]: Some analysis and application of knowledge of the factors affecting the development of landforms of fluvial erosion. Level 1 [0-2 marks]: Limited analysis and application of knowledge of the factors affecting the development of landforms of fluvial erosion. AO3 Skills and communication Level 3 [6-7 marks]: Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. Clear conclusion(s) are drawn. Level 2 [4-5 marks]: Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. Conclusion(s) are attempted. Level 1 [0-3 marks]: Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology No conclusion(s) are attempted.	

Question Answer		Marks	Guidance	
			Content	Levels of Response
6	Factors include wave type/characteristics, beach profile, rock type, structure, aspect and sea-level change. Human factors, such as coastal protection, may also be appropriate. These factors act through the erosional processes to affect landform development. This may include initial formation and subsequent modification. Landforms include cliffs, wave cut platforms, bays, caves, arches, stacks, stumps. Answers might include description, explanation and comment, perhaps at the top end, on the importance of the factors concerned and/or their inter-relationships.	25	Factors influencing weathering and mass movement processes may also be relevant if linked to appropriate erosional landforms. Credit answers relating to the role of erosion in the development of beaches/spits/bars.	AO1 Knowledge and understanding Level 3 [11-13 marks]: Detailed knowledge and understanding of at least two factors, explicitly addressed, and two landforms. Cause-effect links are clearly explained and there is effective use of detailed exemplification with processes explicitly linking factors and landforms. Level 2 [7-10 marks]: Some knowledge and understanding of at least two factors, although maybe implicit, and landforms or more detailed knowledge and understanding of one. Cause-effect links are stated but not clearly explained and there is use of exemplification with some linkages made between factors and landforms, perhaps via generic erosion references. Level 1 [0-6 marks]: Limited knowledge and understanding of at least one factor and/or landform. Cause-effect links are limited or absent. If no located example then top of Level 1 Max.

Question	Question Answer Ma			Guidance	
			Content	Levels of Response	
			Application: focus of the answer is clearly on the factors themselves. Analysis: comments on the factors eg relative importance, role of both physical and human, interconnection, spatial and temporal variability.	AO2 Analysis and application Level 3 [5 marks]: Clear analysis and application of knowledge of the factors affecting the development of landforms of coastal erosion. Level 2 [3-4 marks]: Some analysis and application of knowledge of the factors affecting the development of landforms of coastal erosion. Level 1 [0-2 marks]: Limited analysis and application of knowledge of the factors affecting the development of landforms of coastal erosion. AO3 Skills and communication Level 3 [6-7 marks]: Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. Clear conclusion(s) are drawn. Level 2 [4-5 marks]: Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. Conclusion(s) are attempted. Level 1 [0-3 marks]: Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology. No conclusion(s) are attempted.	

Question Answer		Marks	Guidance	
			Content	Levels of Response
7	To help achieve sustainable development: Either current needs are met in a balanced way; Or the ability of future generations to meet their own needs is not compromised. Socio-economic needs include the demand for housing, jobs, energy, water, food and transportation systems. Environmental needs include conservation, regeneration, and sustainable management. Management strategies may include planning developing renewable energy, fishing quotas, eco-tourism rules and regulations.	25		AO1 Knowledge and understanding Level 3 [11-13 marks]: Detailed knowledge and understanding of careful management strategies/approaches. Cause-effect links are clearly explained and there is effective use of detailed exemplification. Good use is made of located evidence. Level 2 [7-10 marks]: Some knowledge and understanding of careful management strategies/approaches. Cause-effect links are stated but not clearly explained. At least one located example is provided. Level 1 [0-6 marks]: Limited knowledge and understanding of careful management strategies/approaches. Cause-effect links are limited or absent. If no located example then top of level 1 Max.

Question Answer Ma		Marks		Guidance	
			Content	Levels of Response	
			Application: focus of the answer is clearly on sustainable development. Analysis: expect comments that explicitly address sustainability, by referring to the balancing of needs or meeting future needs.	AO2 Analysis and application Level 3 [5 marks]: Clear analysis and application of knowledge of management to sustainable development. Level 2 [3-4 marks]: Some analysis and application of knowledge of management to sustainable development. Level 1 [0-2 marks]: Limited analysis and application of knowledge of management to sustainable development. AO3 Skills and communication Level 3 [6-7 marks]: Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. Clear conclusion(s) are drawn. Level 2 [4-5 marks]: Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. Conclusion(s) are attempted. Level 1 [0-3 marks]: Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology. No conclusion(s) are attempted.	

Question Answer		Marks		Guidance	
			Content	Levels of Response	
8	To help achieve sustainable development: Either current needs are met in a balanced way; Or the ability of future generations to meet their own needs is not compromised. Socio-economic needs include the demand for housing, jobs, energy, water, food and transportation systems. Environmental needs include conservation, regeneration, and sustainable management. Management strategies may include planning developing renewable energy, water supply management, eco-tourism rules and regulations.	25		AO1 Knowledge and understanding Level 3 [11-13 marks]: Detailed knowledge and understanding of careful management strategies/approaches. Cause-effect links are clearly explained and there is effective use of detailed exemplification. Good use is made of located evidence. Level 2 [7-10 marks]: Some knowledge and understanding of careful management strategies/approaches. Cause-effect links are stated but not clearly explained. At least one located example is provided. Level 1 [0-6 marks]: Limited knowledge and understanding of careful management strategies/approaches. Cause-effect links are limited or absent. If no located example then top of Level 1 Max.	

Question Answer Mar		Marks		Guidance
			Content	Levels of Response
			Application: focus of the answer is clearly on sustainable development. Analysis: expect comments that explicitly address sustainability, by referring to the balancing of needs or meeting future needs.	AO2 Analysis and application Level 3 [5 marks]: Clear analysis and application of knowledge of management to sustainable development. Level 2 [3-4 marks]: Some analysis and application of knowledge of management to sustainable development. Level 1 [0-2 marks]: Limited analysis and application of knowledge of management to sustainable development. AO3 Skills and communication Level 3 [6-7 marks]: Answer is well structured with accurate grammar and spelling. Good use of appropriate geographical terminology. Clear conclusion(s) are drawn. Level 2 [4-5 marks]: Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. Conclusion(s) are attempted. Level 1 [0-3 marks]: Answer has little structure and has some errors in grammar and spelling. Little use of appropriate geographical terminology. No conclusion(s) are attempted.

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