OCR
Oxford Cambridge and RSA

GCE

Geography

Unit **F761:** Managing Physical Environments

Advanced Subsidiary GCE

Mark Scheme for June 2018

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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.

Annotations

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.
	Level one – to be used on the final, 9 mark part of Section A questions only.
	Level two – to be used on the final, 9 mark part of Section A questions only.
	Level three – to be used on the final, 9 mark part of Section A questions only.
	Unclear, inaccurate, dubious validity.
	Irrelevant, a significant amount of material that does not answer the question
	No example(s) used or provided.
	Rubric Error (place at start of Question not being counted)
	Highlighting an issue eg irrelevant paragraph. Use in conjunction with another stamp eg  or 
	Point has been seen and noted

Subject-specific marking instructions

In 9 mark questions, the Level awarded annotation should be positioned in left margin adjacent to the evidence for the award of that level. The wavy line or highlighting annotations may be used as well if the evidence covers more than one line of text.

Question			Answer	Marks	Guidance	
					Content	**Levels of response**
1	**(a)**	**(i)**	**Outline two different pieces of evidence from Fig. 1 that show this river has eroded the landscape.** Evidence includes: Deep valley/canyon; Incision of meanders; Stepped profile of valley sides: Each suggest vertical erosion. Colour of the water.	**4**	An outline is required. There should be a link between what is visible in the photograph and how this indicates erosion has taken place.	**Level 2:** Two valid pieces of evidence outlined. **(3 – 4 marks)** **Level 1:** One valid piece of evidence outlined or two pieces of evidence stated. **(1 – 2 marks)** **0 marks –** No credit worthy response
		(ii)	**Explain two processes by which this river is likely to be eroding the landscape.** Processes include: Corrasion/abrasion; Corrosion/solution; Attrition; Hydraulic action.	**6**	Processes should be explained, not just described. A key discriminator will be references to available energy.	**Level 2:** Two valid processes clearly explained. Good use of technical language. **(5 – 6 marks)** **Level 1:** One valid process clearly explained or two valid processes described but not clearly explained. Gaps in technical language. One explained well may reach the top of this level. **(1 – 4 marks)** **0 marks –** No credit worthy response

Question			Answer	Marks	Guidance	
					Content	**Levels of response**
1	**(b)**		**Explain two likely conflicts between different land-uses in river basins.** Conflicts may be between any of: agriculture, settlement, industry, recreation/leisure, water supply, transportation, energy and conservation. 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 e.g. urbanisation, and those suffering from flooding e.g. farming. Conflicts resulting from management e.g. dam construction.	**6**	Credit any valid conflict. Conflicts should be explicit i.e. how one impacts upon the other or why they are incompatible in the same place. Beware answers referring to conflicts between the same land uses, e.g. 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 explains two different conflicts between appropriate land uses. **Level 1 (1-4 marks):** Identifies different land use(s) but cause of conflict between them is not clearly explained. One explained well may reach the top of this level. **0 marks –** No credit worthy response

Question			Answer	Marks	Guidance	
					Content	Levels of response
	(c)		**With reference to one or more located examples, show how issues arising from the development of river basins can be managed.** Issues may include: conflicts between different land uses/human activities, pollution, views/opinions of locals, flood protection. Management may include: planning policies, land-use zoning, legislation, hard/soft engineering.	9		**Level 3 (8-9 marks):** Uses well-chosen example(s) to show how at least two issues are managed. 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 show how at least one issue is managed. Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. **Level 1 (1-4 marks):** Limited/no example. Descriptive observations of management but not linked to issue(s). 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. **0 marks –** No credit worthy response

Question			Answer	Marks	Guidance	
					Content	**Levels of response**
2	**(a)**	**(i)**	**Outline two different pieces of evidence from Fig. 2 that show longshore drift is taking place.** Evidence includes: Beach extending further out on one side of groyne, higher beach on one side of groyne, wave front at an angle.	**4**	An outline is required. There should be a link between what is visible in the photograph and how this indicates longshore drift has taken place. General comparison of "amount of sediment" between the 2 sides of the groyne is the same piece of evidence.	**Level 2:** Two valid pieces of evidence outlined. **(3 – 4 marks)** **Level 1:** One valid piece of evidence outlined or two pieces of evidence stated. **(1 – 2 marks)** **0 marks –** No credit worthy response
		(ii)	**Explain the process of longshore drift occurring on this beach.** Explanation includes: angle of approach of wave fronts, direction of swash and backwash, repetition over time.	**6**	Explanation is required, not just a description of the process. A key discriminator will be the reasons for the different angles of swash and backwash.	**Level 2:** Process clearly explained. Good use of technical language. **(5 – 6 marks)** **Level 1:** Process described but not clearly explained. Gaps in technical language. **(1 – 4 marks)** **0 marks –** No credit worthy response

Question			Answer	Marks	Guidance	
					Content	**Levels of response**
	(b)		**Explain two likely conflicts between different human activities in coastal areas.** Conflicts may be between any of: agriculture, settlement, industry, recreation/leisure, transportation, energy and conservation. Conflicts include pollution from agricultural/industrial areas damaging habitats/food chains causing resentment in conservation areas. Also relevant are conflicts between locals and visitors over noise and behaviour, litter, rising property prices. Conflicts resulting from management e.g. groyne construction.	**6**	Credit any valid conflict. Conflicts should be explicit i.e. how one impacts upon the other or why they are incompatible in the same place. Beware answers referring to conflicts between the same activities, e.g. fishing. 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 explains two different conflicts between appropriate activities. **Level 1 (1-4 marks):** Identifies different activities but cause of conflict between them is not clearly explained. One explained well may reach the top of this level. **0 marks –** No credit worthy response

Question			Answer	Marks	Guidance	
					Content	**Levels of response**
	(c)		**With reference to one or more located examples, show how issues arising from the development of coastal areas can be managed.** Issues may include: conflicts between different land uses/human activities, pollution, views/opinions of locals, protection from erosion and flooding. Management may include: planning policies, land-use zoning, legislation, hard/soft engineering.	**9**		**Level 3 (8-9 marks):** Uses well-chosen example(s) to show how at least two issues are managed. 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 show how at least one issue is managed. Answer has sound structure but may have some errors in grammar and spelling. Some use of appropriate geographical terminology. **Level 1 (1-4 marks):** Limited/no example. Descriptive observations of management but not linked to issue(s). 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. **0 marks –** No credit worthy response

Question			Answer	Marks	Guidance	
					Content	**Levels of response**
3	**(a)**	**(i)**	**Identify four of the landforms shown in Fig. 3.** A= pyramidal peak B= cirque/corrie/tarn C= arête D= hanging valley E= U-shaped valley/trough or ribbon lake F= truncated spur	**4**	Any four required.	Point mark. 1 mark for each correct answer.
3	**(a)**	**(ii)**	**Explain how one of these landforms has been shaped by natural processes.** Depends on the landform chosen, but answer should explain how natural processes such as erosion by ice and weathering have resulted in the particular shape of the landform.	**6**	A key discriminator will be process detail e.g. plucking, abrasion, freeze-thaw and explicit links to the shape of the landform. Candidates may choose landforms on the diagram not selected in (i).	**Level 2:** Clear explanation of how processes have shaped the landform. **(5 – 6 marks)** **Level 1:** Some explanation of how processes have shaped the landform OR detail of the processes, but without explicit links to the shaping of the landform. **(1 – 4 marks)** **0 marks –** No credit worthy response

Question			Answer	Marks	Guidance	
					Content	Levels of response
	(b)		**Explain two reasons why ecosystems in cold environments are fragile.** Climate is harsh with extreme low temperatures, short growing season and frozen moisture. Recovery rates are very slow. Soils are thin and infertile. NPP, biomass and biodiversity are all low. Specialised adaptations; species may be slow to adapt and evolve during climate change.	6		**Level 2:** Explains two reasons for fragility. Clear links established. Good use of technical language. **(5 – 6 marks)** **Level 1:** Explains at least one reason for fragility. Links may be stated rather than explained. Gaps in technical language. One explained well may reach the top of this level. **(1 – 4 marks)** **0 marks –** No credit worthy response

Question			Answer	Marks	Guidance	
					Content	Levels of response
3	(c)		**With reference to a located example, explain how cold environments provide challenges for economic development.** Challenges include climate, avalanches, fragile ecosystems, ground conditions (permafrost/active layer), costs, remoteness and conflicts with indigenous populations, restrictions of protected areas/legislation/treaties. 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 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 used to describe at least two challenges. Cause-effect links are stated but not

Question			Answer	Marks	Guidance	
					Content	Levels of response
						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**
4	**(a)**	**(i)**	**Identify four of the landforms shown in Fig. 4.** A= pediment/pediplain B= spire or butte C= plateau D= canyon E= alluvial fan F= butte or mesa	**4**	Any four required. NB. If B=butte then F=mesa. If B=spire then F=mesa or butte; i.e. different size should be acknowledged.	Point mark. 1 mark for each correct answer.
4	**(a)**	**(ii)**	**Explain how one of these landforms has been shaped by natural processes.** Depends on the landform chosen, but answer should explain how natural processes have resulted in the particular shape of the landform. Processes may include fluvial erosion or deposition, aeolian (wind) erosion or deposition, as well as weathering and/or mass movement	**6**	A key discriminator will be process detail e.g. abrasion, salt crystallisation, rock fall' and explicit links to the shape of the landform. Candidates may choose landforms on the diagram not selected in (i).	**Level 2:** Clear explanation of how processes have shaped the landform. **(5 – 6 marks)** **Level 1:** Some explanation of how processes have shaped the landform OR detail of the processes, but without explicit links to the shaping of the landform. **(1 – 4 marks)** **0 marks –** No credit worthy response
4	**(b)**		**Explain two reasons why hot arid/semi-arid environments are fragile.** Climate is harsh with extreme high temperatures, low rainfall, short growing season. Recovery rates are very slow. Soils are thin and infertile. NPP, biomass and biodiversity are all low. Specialised adaptations; species may be slow to	**6**		**Level 2:** Explains two reasons for fragility. Clear links established. Good use of technical language. **(5 – 6 marks)** **Level 1:** Explains at least one reason for fragility. Links may be stated rather than explained. Gaps in technical language.

Question			Answer	Marks	Guidance	
					Content	Levels of response
			adapt and evolve during climate change.			One explained well may reach the top of this level. **(1 – 4 marks)** **0 marks –** No credit worthy response

Question			Answer	Marks	Guidance	
					Content	Levels of response
4	(c)		**With reference to a located example, explain how hot arid/semi-arid environments provide challenges for economic development.** Challenges include environmental constraints, costs, remoteness and conflicts with indigenous populations, restrictions of protected areas/legislation/treaties. 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 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 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.

Question			Answer	Marks	Guidance	
					Content	Levels of response
						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.

Section B

Question			Answer	Marks	Guidance	
					Content	**Levels of response**
5			**With reference to located examples from one or more river basins, examine how fluvial deposition produces a range of landforms.** Landforms include: slip off slopes, levees, flood plains, deltas, braided channels. Deposition occurs when there is a reduction in available energy, usually due to a decrease in velocity and/or volume. This occurs in a variety of locations, hence the range of different landforms.	**25**		**AO1 Knowledge and understanding** **Level 3:** Detailed knowledge and understanding of how deposition produces landforms. Cause-effect links are clearly explained. There is effective use of detailed exemplification with energy reduction being explicitly linked to sediment deposition. **(11-13 marks)** **Level 2:** Some knowledge and understanding of how deposition produces landforms. Cause-effect links are stated but not clearly explained. There is use of exemplification with some linkages made between velocity decrease and deposition. **(7–10 marks)** **Level 1:** Limited knowledge and understanding of how deposition produces landforms. Cause-effect links are limited or absent. There is limited exemplification of depositional processes. If no located example then top of Level 1 Max. **(1 – 6 marks)** **0 marks –** No credit worthy response

Question			Answer	Marks	Guidance	
					Content	Levels of response
					Application: focus of the answer is clearly on range. Analysis: expect comments that explicitly address range, by referring to the different types, scales or locations of the landforms.	**AO2 Analysis and application** **Level 3:** Clear analysis and application of knowledge and understanding of the range of landforms. **(5 marks)** **Level 2:** Some analysis and application of knowledge and understanding of the range of landforms. **(3–4 marks)** **Level 1:** Limited analysis and application of knowledge and understanding of the range of landforms. **(1–2 marks)** **0 marks –** No credit worthy response
						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. **(1–3 marks)** **0 marks –** No credit worthy response

Question			Answer	Marks	Guidance	
					Content	Levels of response
6			**With reference to located examples from one or more coastlines, examine how coastal deposition produces a range of landforms.** Landforms include: beaches, spits, bars, tombolos, cuspate forelands, saltmarshes. Aeolian deposition forming sand dunes also relevant. Deposition occurs when there is a reduction in available energy, usually due to a decrease in velocity and/or volume. This occurs in a variety of locations, hence the range of different landforms.	25		**AO1 Knowledge and understanding** **Level 3:** Detailed knowledge and understanding of how deposition produces landforms. Cause-effect links are clearly explained. There is effective use of detailed exemplification with energy reduction being explicitly linked to sediment deposition. **(11 – 13 marks)** **Level 2:** Some knowledge and understanding of how deposition produces landforms. Cause-effect links are stated but not clearly explained. There is use of exemplification with some linkages made between velocity decrease and deposition. **(7–10 marks)** **Level 1:** Limited knowledge and understanding of how deposition produces landforms. Cause-effect links are limited or absent. There is limited exemplification of depositional processes. If no located example then top of Level 1 Max. **(0 – 6 marks)** **0 marks –** No creditworthy response
					Application: focus of the answer is clearly on range. Analysis: expect comments that explicitly address range, by referring to the different types,	**AO2 Analysis and application** **Level 3:** Clear analysis and application of knowledge and understanding of the range of landforms. **(5 marks)**

Question			Answer	Marks	Guidance	
					Content	Levels of response
					scales or locations of the landforms.	**Level 2:** Some analysis and application of knowledge and understanding of the range of landforms. **(3–4 marks)** **Level 1:** Limited analysis and application of knowledge and understanding of the range of landforms. **(1-2 marks)** **0 marks –** No creditworthy response
						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. **(1–3 marks)** **0 marks –** No creditworthy response

Question			Answer	Marks	Guidance	
					Content	Levels of response
7			**With reference to located examples, examine the different ways in which cold environments can be managed sustainably.** To help achieve sustainable management: **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	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.	**AO1 Knowledge and understanding** **Level 3:** Detailed knowledge and understanding of management strategies/approaches. Cause-effect links are clearly explained and there is effective use of detailed exemplification. Good use is made of located evidence. **(11-13 marks)** **Level 2:** Some knowledge and understanding of management strategies/approaches. Cause-effect links are stated but not clearly explained. At least one located example is provided. **(7-10 marks)** **Level 1:** Limited knowledge and understanding of management strategies/approaches. Cause-effect links are limited or absent. **(0-6 marks)** If no located example then top of level 1 Max. **0 marks –** No creditworthy response **AO2 Analysis and application** **Level 3:** Clear analysis and application of knowledge of management to sustainable development. **(5 marks)** **Level 2:** Some analysis and application of knowledge of management to sustainable development. **(3-4 marks)**

Question			Answer	Marks	Guidance	
					Content	Levels of response
						Level 1: Limited analysis and application of knowledge of management to sustainable development. **(0-2 marks)** **0 marks –** No creditworthy response
						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) attempted. **(0-3 marks)** **0 marks –** No creditworthy response

Question			Answer	Marks	Guidance	
					Content	Levels of response
8			**With reference to located examples, examine the different ways in which hot arid/semi-arid environments can be managed sustainably** To help achieve sustainable management: **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:** Detailed knowledge and understanding of management strategies/approaches. Cause-effect links are clearly explained and there is effective use of detailed exemplification. Good use is made of located evidence. **(11-13 marks)** **Level 2:** Some knowledge and understanding of management strategies/approaches. Cause-effect links are stated but not clearly explained. At least one located example is provided. **(7-10 marks)** **Level 1:** Limited knowledge and understanding of management strategies/approaches. Cause-effect links are limited or absent. **(0-6 marks)** If no located example then top of level 1 Max. **0 marks –** No creditworthy 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:** Clear analysis and application of knowledge of management to sustainable development. **(5 marks)** **Level 2:** Some analysis and application of knowledge of management to sustainable development. **(3-4 marks)**

Question			Answer	Marks	Guidance	
					Content	Levels of response
						Level 1: Limited analysis and application of knowledge of management to sustainable development. **(0-2 marks)** **0 marks –** No creditworthy response
						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) attempted. **(0-3 marks)** **0 marks –** No creditworthy response

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