3.9 Coastal Management and a UK Scheme: Test Pack

AQA 8035 · Calculator allowed · about 15 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Name the hard engineering method made from wire cages filled with stones.

(Total for Question 1 is 1 mark)

2 Real UK case-study evidence: Mappleton, Holderness coast, East Riding of Yorkshire. In 1991 rock armour and two rock groynes were built because erosion threatened homes and the coast road. The defences protected the village and road locally, while trapping sediment reduced its supply down-drift to the south and contributed to faster erosion there. No actual scheme cost is supplied.

"The Mappleton scheme should be judged a success." Assess this view. Use the reasons for the scheme, its strategies and its effects, and explain whose interests carry most weight in your judgement.

(Total for Question 2 is 6 marks)

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3 Explain how rock armour reduces erosion at the foot of a cliff.

(Total for Question 3 is 2 marks)

4 A fictional council proposes managed realignment: moving its defence inland and allowing tides onto a low-lying field. State what makes this a planned strategy and explain one possible benefit and one cost.

(Total for Question 4 is 3 marks)

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Mark scheme · 3.9 Coastal Management and a UK Scheme: Test Pack

Question 1

Gabions; accept gabion baskets or rock-filled wire cages. **B1**

Answer: Gabions.

Question 2

Level 3 Developed, accurate reasoning weighs benefits against costs or conflicts using the supplied context. A supported judgement explains which considerations matter most. Award 6 where the reasoning is sustained and the conclusion follows convincingly from the evidence; award 5 where this is less consistent. **5-6**

Level 2 Some clear explanation applies relevant management knowledge to the context. There is some comparison or consideration of different interests, but weighing is partial or the judgement has limited support. Award 4 for clearer development and application; award 3 for a less developed response. **3-4**

Level 1 Basic relevant statements about management, with little development or application. A judgement may be asserted without support. Award 2 for more relevant detail; award 1 for an isolated relevant point. **1-2**

Level 0 No relevant content. **0**

Indicative content:

- Mark by best fit across the levels, out of 6. The B1 points below identify creditworthy content, not six compulsory ticks or extra marks. Accept any alternative supported judgement. No separate spelling, punctuation or grammar marks are awarded.
- B1: Credit the reason for intervention: erosion threatened homes and the coast road at Mappleton.
- B1: Credit rock armour dissipating wave energy, linked to reducing local wave attack.
- B1: Credit the two rock groynes trapping sediment and maintaining a protective beach.
- B1: Credit the local benefit to the village, road users or residents, developed beyond naming the place.
- B1: Credit reduced sediment supply down-drift to the south, loss of beach protection and increased erosion as a wider cost or source of conflict.
- B1: Credit weighing of these effects and a supported judgement. Either success or failure overall, or a qualified local-success conclusion, can reach the top band.
- Alternative supported judgement in favour: judge the scheme successful overall because protecting homes and a shared road deserves greater weight than the down-drift costs, while acknowledging and explaining those costs.
- Alternative supported judgement against: judge the scheme unsuccessful overall because transferred erosion and unequal treatment of neighbouring owners outweigh local protection; explain the sediment mechanism and the local benefit rather than denying them.
- Accept a qualified local-success judgement or either overall conclusion when supported by accurate evidence. Do not require an actual scheme cost, a benefit-cost ratio or an unprovided numerical erosion rate.
- Example supported response: The scheme was successful for its immediate purpose: erosion threatened Mappleton homes and the coast road, and rock armour dissipates wave energy while the two groynes retain beach sediment. A protective beach and rock armour helped defend the village and road, benefiting residents and road users. However, retaining sediment reduced the supply farther south. Less beach protection there contributed to faster erosion, so down-drift landowners bear costs while Mappleton receives benefits. I judge it a local success rather than a coast-wide success, because the protection of homes and access must be weighed against harm to neighbours. The supplied evidence cannot show whether financial benefits exceeded actual scheme costs, and invented classroom prices cannot resolve this. Monitoring and management of the wider sediment system would matter to an overall judgement.

Question 3

Waves break against large boulders or pass through gaps between them. **B1**

Linked reduction in wave energy reaching the cliff foot reduces erosion. Do not credit a claim that rock armour stops all erosion. **B1**

Answer: Waves break against large boulders and water passes through the gaps. Energy is dissipated, so waves have less energy available to erode the cliff foot.

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Question 4

Deliberate inland relocation of the defence with controlled acceptance of flooding; distinguish from an accidental breach. **B1**

A linked benefit, such as salt marsh habitat forming or dissipating wave energy, or reducing the length of exposed defence to maintain. **B1**

A linked cost, such as loss of farmland or property, relocation, compensation, or opposition from affected owners. **B1**

Answer: The council deliberately moves the defence inland and allows the field to flood. Salt marsh could develop and dissipate wave energy. The farmer loses usable land, so the scheme creates a cost for that landowner.

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