3.9 Coastal Management and a UK Scheme: 10-minute Pack

AQA 8035 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Fictional planning brief: a town has buildings close to the beach; a neighbouring stretch has damaged dunes and a low-lying field with no buildings. The field owner wants to keep farming. The council wants to protect buildings, conserve habitats and limit future spending.

"Hard engineering is the best choice for every part of this coast." Assess this view. Compare hard engineering with at least one of nourishment/reprofiling, dune regeneration or managed realignment, and reach a supported judgement.

(Total for Question 1 is 6 marks)

2 Explain how a sea wall helps protect the land behind it from wave erosion.

(Total for Question 2 is 2 marks)

3 Explain how groynes can build a wider beach.

(Total for Question 3 is 2 marks)

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Mark scheme · 3.9 Coastal Management and a UK Scheme: 10-minute Pack

Question 1

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 an accurate hard-engineering mechanism linked to protecting buildings, such as a wall reflecting waves or rock armour dissipating energy.
- B1: Credit development of a hard-engineering cost or limitation, such as maintenance, base scour or a groyne reducing sediment supply down-drift.
- B1: Credit an accurate comparison with nourishment/reprofiling, dune regeneration or managed realignment in the supplied setting.
- B1: Credit explanation of a soft-strategy limitation, such as repeat nourishment or the need to protect regenerating vegetation from trampling.
- B1: Credit weighing of a conflict, such as farmland loss against habitat creation or access restrictions against dune protection.
- B1: Credit a supported overall judgement, including a conditional decision, a combination of strategies or a defended preference for hard engineering.
- Alternative supported judgement in favour: prioritising hard structures across this short coast could be justified if a response explains how protecting the connected town and access outweighs habitat gains, repair costs and the farmer's interests. The fictional brief gives no numerical hazard probabilities; reasoned conditions are acceptable.
- Alternative supported judgement against: prioritise dune regeneration and nourishment away from buildings, with selective hard defences at the town; justify the spatial differences. Do not assume a soft method always has the lowest lifetime cost.
- Example supported response: I disagree with using hard engineering everywhere. A sea wall or rock armour could reduce wave attack beside the town, where buildings cannot simply be moved inland. But a wall can be costly and reflected waves can erode its base. At the damaged dunes, fencing and planting can rebuild a barrier while conserving a dune habitat, although access restrictions may upset visitors. Nourishment can maintain a beach but repeat work adds costs. Moving a defence inland at the field could allow salt marsh to develop, but it would remove farmland and conflict with the owner. A combination best meets the council's aims: defend the buildings and restore dunes, while considering realignment only where land loss is acceptable. Local priorities and future maintenance should decide the final balance.

Question 2

A wall acts as a barrier between the waves and the land.	**B1**
Linked explanation: it reflects wave energy seawards, reducing direct wave attack on the land. Accept a curved wall redirecting waves seawards.	**B1**

Answer: A sea wall forms a barrier between waves and the land. It reflects wave energy towards the sea, reducing direct wave attack on the land behind.

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Question 3

Groynes interrupt longshore drift and trap moving sediment. **B1**

Linked accumulation of sediment makes the beach wider on the up-drift side. Do not credit the claim that groynes produce new sediment. **B1**

Answer: Groynes interrupt longshore drift and trap sediment on the up-drift side. Sediment accumulates there, making the beach wider.

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