



Under Pressure

Multiple choice knowledge checker



Coastal Processes

1.	What controls tides?	
<input type="radio"/>	A.	Surface winds over the sea, friction with the surface causes ripples.
<input type="radio"/>	B.	Gravitational pull of the moon as the moon circulates Earth.

2.	How do waves form?	
<input type="radio"/>	A.	Surface winds over the sea, friction with the surface causes ripples.
<input type="radio"/>	B.	Gravitational pull of the moon as the moon circulates Earth.

3.	Which statement is NOT a constructive wave?	
<input type="radio"/>	A.	Strong swash.
<input type="radio"/>	B.	Strong backwash.
<input type="radio"/>	C.	Low waves with long gaps between them (8-10 per min).
<input type="radio"/>	D.	Known as spilling waves.

4.	Which statement is NOT a constructive wave?	
<input type="radio"/>	A.	Creates a gentle beach.
<input type="radio"/>	B.	Creates a steep beach.
<input type="radio"/>	C.	Weak backwash.
<input type="radio"/>	D.	Under 1 meter high.

5.	Which statement is NOT a destructive wave?	
<input type="radio"/>	A.	Gently sloping wave front.
<input type="radio"/>	B.	Formed by local storms close to the coast, they destroy the beach.
<input type="radio"/>	C.	Over 1 meter high.
<input type="radio"/>	D.	Weak swash.

6.	Which statement is NOT a destructive wave?	
<input type="radio"/>	A.	Strong backwash.
<input type="radio"/>	B.	Steep high waves that occur close together (up to 15 per min).
<input type="radio"/>	C.	Formed by storms often 100s KM away.
<input type="radio"/>	D.	Known as plunging waves.

7.	What is physical weathering?	
<input type="radio"/>	A.	Weak acid in water dissolves the rock.
<input type="radio"/>	B.	Water gets into cracks in rocks and freezes, it expands, then melts and contracts, this process repeats, weakening the rock.
<input type="radio"/>	C.	Animals and roots break up the rock.

8.	What is biological weathering?	
<input type="radio"/>	A.	Weak acid in water dissolves the rock.
<input type="radio"/>	B.	Water gets into cracks in rocks and freezes, it expands, then melts and contracts, this process repeats, weakening the rock.
<input type="radio"/>	C.	Animals and roots break up the rock.

9.	What is chemical weathering?	
<input type="radio"/>	A.	Weak acid in water dissolves the rock.
<input type="radio"/>	B.	Water gets into cracks in rocks and freezes, it expands, then melts and contracts, this process repeats, weakening the rock.
<input type="radio"/>	C.	Animals and roots break up the rock.

10.	What is abrasion?	
<input type="radio"/>	A.	Loose rocks and sediment are thrown against the cliffs by waves.
<input type="radio"/>	B.	Water is forced into cracks in the rock, compressing the air inside, when the wave retreats the compressed air blasts out. It can force the rock apart.
<input type="radio"/>	C.	Loose sediment knocked off the cliff is swirled around, it constantly collides with other sediment.
<input type="radio"/>	D.	Sea water dissolves calcium carbonate from the rocks.

11.	What is attrition?	
<input type="radio"/>	A.	Loose rocks and sediment are thrown against the cliffs by waves
<input type="radio"/>	B.	Water is forced into cracks in the rock, compressing the air inside, when the wave retreats the compressed air blasts out. It can force the rock apart.
<input type="radio"/>	C.	Loose sediment knocked off the cliff is swirled around, it constantly collides with other sediment.
<input type="radio"/>	D.	Sea water dissolves calcium carbonate from the rocks.

12.	What is hydraulic action?	
<input type="radio"/>	A.	Loose rocks and sediment are thrown against the cliffs by waves
<input type="radio"/>	B.	Water is forced into cracks in the rock, compressing the air inside, when the wave retreats the compressed air blasts out. It can force the rock apart.
<input type="radio"/>	C.	Loose sediment knocked off the cliff is swirled around, it constantly collides with other sediment.
<input type="radio"/>	D.	Sea water dissolves calcium carbonate from the rocks.

13.	What is solution?	
<input type="radio"/>	A.	Loose rocks and sediment are thrown against the cliffs by waves
<input type="radio"/>	B.	Water is forced into cracks in the rock, compressing the air inside, when the wave retreats the compressed air blasts out. It can force the rock apart.
<input type="radio"/>	C.	Loose sediment knocked off the cliff is swirled around, it constantly collides with other sediment.
<input type="radio"/>	D.	Sea water dissolves calcium carbonate from the rocks.

14.	What is traction?	
<input type="radio"/>	A.	When minerals in rocks like chalk and limestone are dissolved in sea water and then carried in solution. The load is not visible.
<input type="radio"/>	B.	Small particles such as silts and clays are suspended in the flow of the water.
<input type="radio"/>	C.	Small pieces of shingle or large sand grains are bounced along the sea bed.
<input type="radio"/>	D.	Large boulders and sediments are rolled along the sea bed. They are too heavy to be picked up fully by the waves.

15.	What is saltation?	
<input type="radio"/>	A.	When minerals in rocks like chalk and limestone are dissolved in sea water and then carried in solution. The load is not visible.
<input type="radio"/>	B.	Small particles such as silts and clays are suspended in the flow of the water.
<input type="radio"/>	C.	Small pieces of shingle or large sand grains are bounced along the sea bed.
<input type="radio"/>	D.	Large boulders and sediments are rolled along the sea bed. They are too heavy to be picked up fully by the waves.

16.	What is suspension?	
<input type="radio"/>	A.	When minerals in rocks like chalk and limestone are dissolved in sea water and then carried in solution. The load is not visible.
<input type="radio"/>	B.	Small particles such as silts and clays are suspended in the flow of the water.
<input type="radio"/>	C.	Small pieces of shingle or large sand grains are bounced along the sea bed.
<input type="radio"/>	D.	Large boulders and sediments are rolled along the sea bed. They are too heavy to be picked up fully by the waves.

17.	What is solution?	
<input type="radio"/>	A.	When minerals in rocks like chalk and limestone are dissolved in sea water and then carried in solution. The load is not visible.
<input type="radio"/>	B.	Small particles such as silts and clays are suspended in the flow of the water.
<input type="radio"/>	C.	Small pieces of shingle or large sand grains are bounced along the sea bed.
<input type="radio"/>	D.	Large boulders and sediments are rolled along the sea bed. They are too heavy to be picked up fully by the waves.

18.	What is swash?	
<input type="radio"/>	A.	How long the wind has travelled and how strong it is.
<input type="radio"/>	B.	The most common wind direction.
<input type="radio"/>	C.	Waves moving up the beach.
<input type="radio"/>	D.	Waves moving back down the beach.

19.	What is backwash?	
<input type="radio"/>	A.	How long the wind has travelled and how strong it is.
<input type="radio"/>	B.	The most common wind direction.
<input type="radio"/>	C.	Waves moving up the beach
<input type="radio"/>	D.	Waves moving back down the beach.

20.	What is prevailing wind direction?	
<input type="radio"/>	A.	How long the wind has travelled and how strong it is.
<input type="radio"/>	B.	The most common wind direction.
<input type="radio"/>	C.	Waves moving up the beach
<input type="radio"/>	D.	Waves moving back down the beach.

21.	What is fetch?	
<input type="radio"/>	A.	How long the wind has travelled and how strong it is.
<input type="radio"/>	B.	The most common wind direction.
<input type="radio"/>	C.	Waves moving up the beach
<input type="radio"/>	D.	Waves moving back down the beach.

22.	What is longshore drift?	
<input type="radio"/>	A.	Waves approach the beach at an angle due to the fetch. The swash moves up the beach at the same angle as the fetch. The back wash moves back down the beach in the opposite direction. This means that material is moved along the beach in a zigzag motion.
<input type="radio"/>	B.	Waves approach the beach at an angle due to the prevailing wind direction. The swash moves up the beach in the same direction as the prevailing wind. The backwash comes back down the beach at a right angle (90o) due to gravity. This means that material is moved along the beach in a zigzag motion.
<input type="radio"/>	C.	Waves approach the beach at an angle due to the prevailing wind direction. The backwash moves up the beach at the same angle as the prevailing wind. The swash moves back down the beach at a right angle (90o) due to gravity. This means that material is moved along the beach in a zigzag motion.
<input type="radio"/>	D.	

Coastal Landforms

23.	What is a headland?	
<input type="radio"/>	A.	A narrow piece of land that projects from a coastline into the sea.
<input type="radio"/>	B.	A coastal body of water that is sheltered by 2 pieces of land. It connects to a larger body of water.

24.	What is a bay?	
<input type="radio"/>	A.	A narrow piece of land that projects from a coastline into the sea.
<input type="radio"/>	B.	A coastal body of water that is sheltered by 2 pieces of land. It connects to a larger body of water.

25.	Which statement describe the formation of headlands and bays?	
<input type="radio"/>	A.	Waves attack the cliff face between the high and low water mark. Over time a wave cut notch develops. Hydraulic action and abrasion deepen the wave cut notch undercutting the cliff. The overhanging rock collapses leaving a steep sided cliff face. As the cliff erodes it leaves flat rocks and rock pools.
<input type="radio"/>	B.	A joint is attacked by hydraulic action and abrasion. Waves compress the air. The crack widens until a hollow shape is made in the cliff face. 2 hollow shapes at either side of the headland develop and become bigger and wider. Eventually the 2 hollows meet creating a door like shape. The base widens and the roof collapses leaving a pillar. Waves attack the pillar and that in turn collapses.
<input type="radio"/>	C.	Bands of hard and soft rock. Waves attack the cliff face (abrasion and hydraulic action). The less resistant rock erodes more rapidly than the hard rock. The hard rock is left sticking out to sea and the softer rock is now a horseshoe shape between the two pieces of hard rock.

26.	What is a cave?	
<input type="radio"/>	A.	A pillar of rock that has fallen, leaving the base behind.
<input type="radio"/>	B.	Detached vertical column (pillar) of rock.
<input type="radio"/>	C.	A curved structure with 2 pillars to support.
<input type="radio"/>	D.	Natural void / hollow in the ground large enough for humans to enter.

27.	What is an arch?	
<input type="radio"/>	A.	A pillar of rock that has fallen, leaving the base behind.
<input type="radio"/>	B.	Detached vertical column (pillar) of rock.
<input type="radio"/>	C.	A curved structure with 2 pillars to support.
<input type="radio"/>	D.	Natural void / hollow in the ground large enough for humans to enter

28.	What is a stack?	
<input type="radio"/>	A.	A pillar of rock that has fallen, leaving the base behind.
<input type="radio"/>	B.	Detached vertical column (pillar) of rock.
<input type="radio"/>	C.	A curved structure with 2 pillars to support.
<input type="radio"/>	D.	Natural void / hollow in the ground large enough for humans to enter

29.	What is a stump?	
<input type="radio"/>	A.	A pillar of rock that has fallen, leaving the base behind.
<input type="radio"/>	B.	Detached vertical column (pillar) of rock.
<input type="radio"/>	C.	A curved structure with 2 pillars to support.
<input type="radio"/>	D.	Natural void / hollow in the ground large enough for humans to enter

30.	Which statement describes the formation of a stump?	
<input type="radio"/>	A.	Waves attack the cliff face between the high and low water mark. Over time a wave cut notch develops. Hydraulic action and abrasion deepen the wave cut notch undercutting the cliff. The overhanging rock collapses leaving a steep sided cliff face. As the cliff erodes it leaves flat rocks and rock pools.
<input type="radio"/>	B.	A joint is attacked by hydraulic action and abrasion. Waves compress the air. The crack widens until a hollow shape is made in the cliff face. 2 hollow shapes at either side of the headland develop and become bigger and wider. Eventually the 2 hollows meet creating a door like shape. The base widens and the roof collapses leaving a pillar. Waves attack the pillar and that in turn collapses.
<input type="radio"/>	C.	Bands of hard and soft rock. Waves attack the cliff face (abrasion and hydraulic action). The less resistant rock erodes more rapidly than the hard rock. The hard rock is left sticking out to sea and the softer rock is now a horseshoe shape between the two pieces of hard rock.

Skills

31.	How do you use 4 figure grid references?	
<input type="radio"/>	A.	Along the corridor and up the stairs to find the top right hand corner of a grid square
<input type="radio"/>	B.	Along the corridor and up the stairs to find the bottom left hand corner of a grid square
<input type="radio"/>	C.	Up the stairs and along the corridor to find the top right hand corner of a grid square
<input type="radio"/>	D.	Up the stairs and along the corridor to find the bottom left hand corner of a grid square

32.	How do you use 6 figure grid references?	
<input type="radio"/>	A.	First find the 4 figure grid reference by going along the corridor and up the stairs to find the top right hand corner of a grid square and leave a space after the first 2 digits Then estimate how many 10ths across the grid square your symbol is and write this number after the first 2 digits, then estimate how many 10ths up the grid square your symbol is. Write this number after the last two digits.
<input type="radio"/>	B.	First find the 4 figure grid reference by going along the corridor and up the stairs to find the bottom left hand corner of a grid square and leave a space after the first 2 digits. Then estimate how many 10ths across the grid square your symbol is and write this number after the first 2 digits, then estimate how many 10ths up the grid square your symbol is. Write this number after the last two digits.

33.	How do you measure straight line distances?	
<input type="radio"/>	A.	Lay a piece of string along the route, mark the string and measure its length. Compare this to the scale to give the distance or divide the number by 4.
<input type="radio"/>	B.	Use a ruler to measure the distance between two places. Compare this to the scale to give the distance or divide the number by 4.

34.	How do you measure distance along a road or river?	
<input type="radio"/>	A.	Lay a piece of string along the route, mark the string and measure its length. Compare this to the scale to give the distance or divide the number by 4.
<input type="radio"/>	B.	Use a ruler to measure the distance between two places. Compare this to the scale to give the distance or divide the number by 4.

Managing Coastal Erosion

35.	Which statement is a social impact of coastal erosion?	
<input type="radio"/>	A.	People are stressed over losing equity (money) in their homes.
<input type="radio"/>	B.	It is difficult and expensive to insure houses close to the cliffs.
<input type="radio"/>	C.	Caravan Park at Barmston is retreating backwards and losing 10 sites per year.
<input type="radio"/>	D.	Cliff collapse exposes different types of rocks and fossils.

36.	Which statement is an economic impact of coastal erosion?	
<input type="radio"/>	A.	Loss of services such as schools and post offices for local people/
<input type="radio"/>	B.	Bird nesting sites and green land at the top of the cliffs are being lost.
<input type="radio"/>	C.	Gas terminal at Easington is at risk – this would cost the UK 25% of its gas supply, increasing prices.
<input type="radio"/>	D.	It is dangerous for people to walk on the cliff tops and on the beach if the cliffs collapse.

37.	Which statement is an environmental impact of coastal erosion?	
<input type="radio"/>	A.	£2 million rock groyne built at Mableton.
<input type="radio"/>	B.	Sue Earl lost her dairy farm and had to sell her cows. She had to pay £3000 in demolition costs for her home and dairy that the council ordered her to do.
<input type="radio"/>	C.	Tourists may stop visiting, this can affect local businesses.
<input type="radio"/>	D.	Spurn Head is at risk of being eroded away with areas of wildlife habitats being destroyed as less material is added to it – can affect SSSI and ecosystems.

38.	What is the definition of hard engineering.	
<input type="radio"/>	A.	More sustainable methods that works with natural processes.
<input type="radio"/>	B.	Man-made structure that stops physical processes.

39.	What is the definition of soft engineering?	
<input type="radio"/>	A.	More sustainable methods that works with natural processes.
<input type="radio"/>	B.	Man-made structure that stops physical processes.

40.	How do sea walls work?	
<input type="radio"/>	A.	A low wall built out into the sea that traps sand that is moved by longshore drift. Usually made out of wooden fences. This builds up the beach so that the wave has further to travel, slowing the wave down and reducing its energy.
<input type="radio"/>	B.	Large boulders which protect the coast by breaking up the waves and reducing their energy.
<input type="radio"/>	C.	Made of stone or concrete. Acts as a physical barrier between the sea and land. The wave travels up the and recurves back on itself, reducing its energy.

41.	How do groynes work?	
<input type="radio"/>	A.	A low wall built out into the sea that traps sand that is moved by longshore drift. Usually made out of wooden fences. This builds up the beach so that the wave has further to travel, slowing the wave down and reducing its energy.
<input type="radio"/>	B.	Large boulders which protect the coast by breaking up the waves and reducing their energy.
<input type="radio"/>	C.	Made of stone or concrete. Acts as a physical barrier between the sea and land. The wave travels up the and recurves back on itself, reducing its energy.

42.	How does rock armour work?	
<input type="radio"/>	A.	A low wall built out into the sea that traps sand that is moved by longshore drift. Usually made out of wooden fences. This builds up the beach so that the wave has further to travel, slowing the wave down and reducing its energy.
<input type="radio"/>	B.	Large boulders which protect the coast by breaking up the waves and reducing their energy.
<input type="radio"/>	C.	Made of stone or concrete. Acts as a physical barrier between the sea and land. The wave travels up the and recurves back on itself, reducing its energy.

43.	How does beach nourishment work?	
<input type="radio"/>	A.	Marram grass is planted to help the sand bind together and prevent wind erosion.
<input type="radio"/>	B.	Adding sand to the beach to make it wider. This ensures that the wave travels further and increases friction, slowing the wave down and reducing its energy.
<input type="radio"/>	C.	Abandon the existing defences and building new defences further inland. This allows the creation of salt marshes – a natural flood defence.

44.	How does dune regeneration work?	
<input type="radio"/>	A.	Marram grass is planted to help the sand bind together and prevent wind erosion.
<input type="radio"/>	B.	Adding sand to the beach to make it wider. This ensures that the wave travels further and increases friction, slowing the wave down and reducing its energy.
<input type="radio"/>	C.	Abandon the existing defences and building new defences further inland. This allows the creation of salt marshes – a natural flood defence.

45.	How does managed retreat work?	
<input type="radio"/>	A.	Marram grass is planted to help the sand bind together and prevent wind erosion.
<input type="radio"/>	B.	Adding sand to the beach to make it wider. This ensures that the wave travels further and increases friction, slowing the wave down and reducing its energy.
<input type="radio"/>	C.	Abandon the existing defences and building new defences further inland. This allows the creation of salt marshes – a natural flood defence.

46.	What are the advantages of a sea wall?	
<input type="radio"/>	A.	Total protection from erosion and can help prevent flooding.
<input type="radio"/>	B.	Traps beach material and creates a protective beach. This acts as a natural barrier to erosion and attracts tourists.
<input type="radio"/>	C.	Absorbs wave energy and fairly cheap.

47.	What are the advantages of groynes?	
<input type="radio"/>	A.	Total protection from erosion and can help prevent flooding
<input type="radio"/>	B.	Traps beach material and creates a protective beach. This acts as a natural barrier to erosion and attracts tourists.
<input type="radio"/>	C.	Absorbs wave energy and fairly cheap.

48.	What are disadvantages of rock armour?	
<input type="radio"/>	A.	Costly to build and maintain, can be viewed as unattractive, can speed up erosion down coast.
<input type="radio"/>	B.	Very expensive, the sea may undercut the defence causing it to collapse.
<input type="radio"/>	C.	May move in storms, can be dangerous to climb on. Will erode and need maintenance.

49.	What are the advantages of beach nourishment?	
<input type="radio"/>	A.	Creates a new habitat for wildlife, binds the sand together to prevent wind erosion.
<input type="radio"/>	B.	Low cost and encourages the creation of beaches and salt marshes which are good for the environment and a natural way to protect against flooding and erosion.
<input type="radio"/>	C.	Relatively inexpensive and attractive to tourists.

50.	What are the disadvantages of dune regeneration?	
<input type="radio"/>	A.	Requires constant maintenance each year as sand is eroded and transported by longshore drift..
<input type="radio"/>	B.	Tourists can trample vegetation or it can block access to the beach.
<input type="radio"/>	C.	People will still lose their homes and may need compensation.

51.	What are the advantages of managed retreat?	
<input type="radio"/>	A.	Creates a new habitat for wildlife, binds the sand together to prevent wind erosion.
<input type="radio"/>	B.	Low cost and encourages the creation of beaches and salt marshes which are good for the environment and a natural way to protect against flooding and erosion.
<input type="radio"/>	C.	Relatively inexpensive and attractive to tourists.

Sea Level Rise

52.	What are the causes of sea level rise?	
<input type="radio"/>	A.	Thermal expansion – oceans are becoming warmer and expanding
<input type="radio"/>	B.	Melting ice on land – increase the volume of water in the ocean.
<input type="radio"/>	C.	Melting of glaciers in mountains – increases the volume of water in the ocean.
<input type="radio"/>	D.	Increased rainfall – increases the volume of water in the ocean.
<input type="radio"/>	E.	Melting of ice in the sea, increases the volume of water in the ocean.

53.	Which statement describes a social impact of sea level rise?	
<input type="radio"/>	A.	Loss of beaches, reduces habitats.
<input type="radio"/>	B.	Buying more land.
<input type="radio"/>	C.	Ask Japan for \$60 million to protect the capital Male by building a sea wall.
<input type="radio"/>	D.	Houses destroyed / lost. Could make entire communities homeless.

54.	Which statement describes an economic impact of sea level rise?	
<input type="radio"/>	A.	Lack of fresh water as it is contaminated by salt water.
<input type="radio"/>	B.	Loss of tourism – the largest industry in the Maldives.
<input type="radio"/>	C.	Communities are split up.
<input type="radio"/>	D.	Destroys habitats.

55.	Which statement describes an environmental impact of sea level rise?	
<input type="radio"/>	A.	Costly to try and encourage other world leaders to follow their example
<input type="radio"/>	B.	Loss of top soil, plants would not be able to grow.
<input type="radio"/>	C.	Airport in danger – the country becomes cut off.
<input type="radio"/>	D.	Disruption of fishing industries – the largest export in the Maldives.

56.	How has the Maldives tried to reduce the impacts of sea level rise?	
<input type="radio"/>	A.	Asked Japan for \$60 million to build a sea wall around the capital Male.
<input type="radio"/>	B.	Building dykes to hold back sea water.
<input type="radio"/>	C.	Educate world leaders on the impacts of climate change on populations at risk.
<input type="radio"/>	D.	Begin to abandon the islands slowly, becoming environmental refugees.
<input type="radio"/>	E.	Protect the main islands from flooding and allowing tourism to continue.

Answers

Coastal Processes

- 1 – B
- 2 – A
- 3 – B
- 4 – B
- 5 – A
- 6 – C
- 7 – B
- 8 – C
- 9 – A
- 10 – A
- 11 – C
- 12 – B
- 13 – D
- 14 – D
- 15 – C
- 16 – B
- 17 – A
- 18 – C
- 19 – D
- 20 – B
- 21 – A
- 22 – B

Coastal Landforms

- 23 – A
- 24 – B
- 25 – C
- 26 – D
- 27 – C
- 28 – B
- 29 – A
- 30 – B

Skills

- 31 – B
- 32 – B
- 33 – B
- 34 – A

Managing Coastal Erosion

- 35 – A
- 36 – C
- 37 – D
- 38 – B
- 39 – A
- 40 – C
- 41 – A
- 42 – B
- 43 – B
- 44 – A
- 45 – C
- 46 – A
- 47 – B
- 48 – C
- 49 – C
- 50 – B
- 51 – B

Sea Level Rise

- 52 – A, B, C and D
- 53 – D
- 54 – B
- 55 – B
- 56 – A, B, C, D and E