

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) When waves reach shallow water they tend to be _____, which makes them become nearly parallel to the shore.
A) reflected B) eroded C) refracted D) translated
- 2) When a wave is too steep to support itself, the wave front collapses forward creating a _____ that advances up the shoreline.
A) fetch B) swell C) trough D) break
- 3) Waves begin to "feel bottom" when the depth of water is _____.
A) equal to the wavelength B) equal to one-half the wavelength
C) equal to the fetch D) twice as great as the wavelength
- 4) You visit a coastal area for the first time. You note the presence of marine terraces, sea stacks, and sea arches. Based on these features, the area is likely to be _____.
A) in need of beach nourishment B) an emergent coast
C) a submergent coast D) experiencing a spring tide
- 5) Which of the following shoreline features is a result of erosion?
A) tombolo B) spit C) sea arch D) estuary
- 6) One result of wave refraction is that wave energy is concentrated _____.
A) on tombolos
B) on spits
C) in bays, coves, and other recessed areas between headlands
D) on headlands projecting into the water
- 7) Waves approaching a beach at an oblique angle _____.
A) cause hard stabilization
B) make tides rise and fall
C) cause beach drift and longshore current
D) cause coasts to switch from submergence to emergence
- 8) Fetch is _____.
A) the distance over which the wind blows over open water
B) the circular pattern made by water particles when a wave passes
C) the distance between the trough of a wave and the still water level
D) a method of shoreline erosion control
- 9) One disadvantage of beach nourishment as compared to hard stabilization is _____.
A) hard stabilization makes the coast more scenic for recreation
B) hard stabilization may increase erosion
C) beach nourishment is permanent
D) beach nourishment is expensive

- 10) _____ are huge circular-moving current systems that dominate the surface of the ocean within an ocean basin.
- A) Upwellings B) Gyres C) Coriolis D) Tombolos
- 11) The energy that drives surface ocean currents such as the Gulf Stream comes from _____.
- A) temperature differences B) the Coriolis effect
C) salinity variations D) prevailing wind patterns
- 12) Erosional retreat of a _____ leads to enlargement and extension of a wave-cut platform in the inland direction.
- A) sea arch B) wave-cut cliff C) spit D) marine terrace
- 13) Large estuaries are more common on a(n) _____ coastline.
- A) eroding B) stable C) emergent D) submergent
- 14) A _____ is an isolated remnant of bedrock standing above a wave-cut platform.
- A) sea arch B) marine terrace C) wave-cut cliff D) sea stack
- 15) Upwelling, the rising of water from deeper layers of the ocean, is a wind-induced movement that brings _____ water to the surface.
- A) cold, nutrient-rich B) warm, nutrient-rich
C) warm, nutrient-poor D) cold, nutrient-poor
- 16) Breakwaters, sea walls, and groins are all examples of _____.
- A) beach nourishment B) beach erosion
C) hard stabilization D) tombolos
- 17) As a deep-water wave enters shallow water, the part of the wave in the shallowest water slows down. The deeper-water portion of the wave crest keeps moving at a relatively rapid speed. This wave refraction causes the entire wave crest to progressively rotate toward being _____ with the shoreline.
- A) perpendicular B) eroded C) parallel D) oblique
- 18) If uplift of the land occurs, a wave-cut platform may become a new _____.
- A) spit B) marine terrace C) wave-cut cliff D) sea arch
- 19) _____ is the rising of cold water from deeper layers to replace warmer surface water.
- A) Upwelling B) Wave refraction C) Contraction D) Sublimation
- 20) _____ are low-lying zones that are alternately covered by water during flood tide and exposed following ebb tide.
- A) Tidal flats B) Neap tides C) Tidal deltas D) Ebb deltas
- 21) If a spit grows as it is deposited and extends completely across the former mouth of an estuary, separating it from the open sea, it has become a _____.
- A) sea stack B) barrier island C) baymouth bar D) tombolo
- 22) An increase in seawater density can be caused by _____.
- A) either an increase in temperature or a decrease in salinity
B) a decrease in temperature and salinity
C) an increase in temperature and salinity
D) either a decrease in temperature or an increase in salinity

- 23) Which of the following is an erosional feature associated with shorelines?
A) tombolo B) wave-cut platform C) baymouth bar D) spit
- 24) A _____ is a structure designed to protect boats from large breaking waves by creating a quiet-water zone near shore.
A) seawall B) spit C) breakwater D) groin
- 25) Which of the following shoreline features is a result of deposition?
A) barrier island B) wave-cut platform C) sea stack D) marine terrace