

ANCIENT COASTLINES

READING PRACTICE SETS

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TOEFL iBT READING PRACTICE SET

Directions: Read the passage and answer the questions. Give yourself 18 minutes to complete this practice set.

ANCIENT COASTLINES

1 Information on past climates is of primary relevance to archaeology because of what it tells us about the effects on the land and on the resources that people needed to survive. The most crucial effect of climate was on the sheer quantity of land available in each period, measurable by studying ancient coastlines. **These have changed constantly through time, even in relatively recent periods, as can be seen from the Neolithic stone circle of Er Lannic in Brittany, France, which was once inland but now is half-submerged on an island, or medieval villages in east Yorkshire, England, that have tumbled into the sea in the last few centuries as the North Sea gnaws its way westward and erodes the cliffs.** Conversely, silts deposited by rivers sometimes push the sea farther back, creating new land, as at Ephesus in western Turkey, a port on the coast in Roman times but today some five kilometers inland.

2 Nevertheless, for archeologists who are concerned with the long periods of time of the Paleolithic Age, there are variations in coastlines of much greater magnitude to consider. The expansion and contraction of the continental glaciers caused huge and uneven rises and falls in sea levels worldwide. When the ice sheets grew, the sea level would drop as water became locked up in the glaciers. When the ice melted, the sea level would rise again. Falls in sea level often exposed a number of important land bridges, such as those linking Alaska to northeast Asia and Britain to northwest Europe, a phenomenon with far-reaching effects not only on human colonization of the globe but also on the environment as a whole – the flora and fauna of isolated or insular areas were radically and often **irreversibly affected**. Between North America and Asia today lies the Bering Strait, which is so shallow that a fall in sea level of only 40 meters would turn it into a land bridge. When the ice sheets were at their greatest extent during the Last Glacial Maximum, some 22,000 years ago, it is thought that the fall was about 125 meters, which therefore created not merely a bridge but a vast plain, 1,000 kilometers wide and covering approximately 1,600,000 square kilometers at its greatest extent, which was called Beringia by the Swedish botanist and plant geographer Eric Hultén in 1937. The existence of Beringia, as well as the extent to which it could have supported human life, is one of the crucial pieces of evidence in the continuing debate about the likely route and date of human colonization of the New World.

3 The assessment of past rises and falls in sea level requires study of submerged land surfaces off the coast and of raised or elevated beaches on land. Raised beaches are remnants of former coastlines at higher levels relative to the present shoreline and visible, for instance, along the Californian coast north of San Francisco. The height of a raised beach above the present shoreline, however, does not generally give a straightforward indication of the height of a former sea level. In the majority of cases, the beaches lie at a higher level because the land has been raised up through isostatic uplift or tectonic movement. Isostatic uplift of the land occurs when the weight of ice is removed as temperatures rise, as at the end of an ice age. It has affected coastlines, for example, in Scandinavia, Scotland, Alaska, and Newfoundland since the Younger Dryas, the most recent glacial period, ended about 11,550 years ago. Tectonic movements involve displacements in the plates that make up Earth's crust. Middle and Late Pleistocene raised beaches in the Mediterranean are one instance of such movements.

4 **[A]** Raised beaches often consist of areas of sand, pebbles, or dunes, sometimes containing seashells or piles of debris comprising shells and bones of marine animals used by humans. **[B]** In Tokyo Bay, for example, shell mounds of the Jōmon period, about 16,000 to 3,000 years ago, mark the position of the shoreline at a time of maximum inundation by the sea between 6,500 and 5,500 years ago, when, through tectonic movement, the sea was three to five meters higher in relation to the contemporary landmass of Japan than at present. **[C]** Analysis of the shells themselves has confirmed the changes in marine topography, for it is only during the maximum phase that subtropical species of mollusks are present, indicating a higher water temperature. **[D]**

1. Which of the sentences below best expresses the essential information in the highlighted sentence in paragraph 1? Incorrect choices change the meaning in important ways or leave out essential information.
 - (A) In the last few centuries, coastal erosion created the Neolithic stone circle in Brittany, France, at the same time that it destroyed the medieval villages in Yorkshire, England.
 - (B) Coastlines have changed even in recent times, as shown by the current locations of certain medieval villages and Neolithic monuments.
 - (C) Recent changes in the coastlines near the Neolithic stone circle of Er Lannic in Brittany, France, and the medieval villages in Yorkshire, England, suggest that ancient coastlines changed in similar ways.
 - (D) Changes in coastlines can lead to the creation of islands such as Er Lannic in France or the total erosion of the cliffs as in Yorkshire, England, though no considerable changes have occurred in recent periods.

2. According to paragraph 1, which of the following is the city of Ephesus in western Turkey an example of?
 - (A) Recent changes in the shoreline that have resulted in the creation of new land.
 - (B) Port cities that have lost shoreline due to the erosion of land.
 - (C) The ocean's role in the formation of new land.
 - (D) The importance of changes in shoreline to cities located inland.

3. By indicating that flora and fauna of isolated or insular areas were often **irreversibly affected** by the changes due to the Ice Age, the author means that the flora and fauna were
 - (A) unable to return to their previous conditions
 - (B) in a constant state of change
 - (C) completely destroyed by human colonization
 - (D) unevenly distributed across the area

4. According to paragraph 2, all of the following are true of Beringia EXCEPT:
 - (A) It may have been used by the people who first colonized North America.
 - (B) It may have been large enough to support life.
 - (C) It was probably still forty meters under water during the glacier maximum.
 - (D) It was probably a vast plain.

5. What purpose does the discussion about the Bering Strait in paragraph 2 serve in the passage?
 - (A) It explains that changes in coastlines do not necessarily result in major alternations to existing marine life.
 - (B) It illustrates the kind of impact that variations in land availability caused by climate change can have.
 - (C) It provides archaeological evidence that casts doubt on changes in sea level during the Paleolithic Age.
 - (D) It shows how ancient coastlines can serve as useful models in understanding recent changes in coastlines.

6. According to paragraph 3, why is the height of a raised beach not a straightforward indicator of past sea level?
 - (A) The height of the beach may have been raised or altered by human interventions in the shore environment.
 - (B) The height of the beach may be the result of erosion over a brief period of time.
 - (C) It is difficult to assess if the sea actually existed at that level for any significant period of time.
 - (D) The surface of Earth may have shifted, moving the beach from its original position.

7. According to paragraph 3, which of following causes an isostatic uplift?
- (A) Shifts in Earth's crust
 - (B) A decrease in the pressure of thick ice sheets
 - (C) A decrease in temperature
 - (D) Changes in sea level
8. Which of the following can be inferred from paragraph 4 about Tokyo Bay?
- (A) The coastal land currently available is smaller than it was during the Japan period.
 - (B) The height of raised beaches around Tokyo Bay is a poor indicator of ancient sea levels.
 - (C) The water temperature in Tokyo Bay is lower at present than it was during the Jōmon period.
 - (D) Tectonic movement during the Jōmon period was not responsible for the formation of Tokyo Bay's raised beaches.
9. Look at the four squares [A-D] that indicate where the following sentence could be added to the passage.

The location of these heaps of refuse can be an accurate indicator of earlier coastlines.

Where would the sentence best fit?

10. **Directions:** An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the **THREE** answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. **This question is worth 2 points.**

Changes in climate have altered Earth's coastlines and their environments.

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Answer Choices

- (A) Changing coastlines affect the total amount of land available for people to live on.
- (B) The existence of Beringia, an immense landmass that may have supported human life, is still debated by archaeologists.
- (C) Raised beaches, which may contain indicators of human activity, are often the result of isotactic uplifts and tectonic movements.
- (D) The expansion and contraction of glaciers caused rises and falls in sea levels all over the world and in some areas led to radical changes in their flora and fauna.
- (E) The climate changes that led to alternations in the coastlines of San Francisco, Scandinavia, Scotland, Alaska, and Newfoundland isolated species that had once flourished together.
- (F) Because raised beaches along the Mediterranean Sea were caused by tectonic movements, they contain abundant evidence of ancient civilizations.