tpo_4_passage_3

Petroleum, consisting of crude oil and natural gas, seems to originate from organic matter in marine sediment. Microscopic organisms settle to the seafloor and accumulate in marine mud. The organic matter may partially decompose, using up the dissolved oxygen in the sediment. As soon as the oxygen is gone, decay stops and the remaining organic matter is preserved. Continued sedimentation-the process of deposits` settling on the sea bottom-buries the organic matter and subjects it to higher temperatures and pressures, which convert the organic matter to oil and gas. As muddy sediments are pressed together, the gas and small droplets of oil may be squeezed out of the mud and may move into sandy layers nearby. Over long periods of time (millions of years), accumulations of gas and oil can collect in the sandy layers. Both oil and gas are less dense than water, so they generally tend to rise upward through water-saturated rock and sediment. Oil pools are valuable underground accumulations of oil, and oil fields are regions underlain by one or more oil pools. When an oil pool or field has been discovered, wells are drilled into the ground. Permanent towers, called derricks, used to be built to handle the long sections of drilling pipe. Now portable drilling machines are set up and are then dismantled and removed. When the well reaches a pool, oil usually rises up the well because of its density difference with water beneath it or because of the pressure of expanding gas trapped above it. Although this rise of oil is almost always carefully controlled today, spouts of oil, or gushers, were common in the past. Gas pressure gradually dies out, and oil is pumped from the well. Water or steam may be pumped down adjacent wells to help push the oil out. At a refinery, the crude oil from underground is separated into natural gas, gasoline, kerosene, and various oils. Petrochemicals such as dyes, fertilizer, and plastic are also manufactured from the petroleum. As oil becomes increasingly difficult to find, the search for it is extended into more-hostile environments. The development of the oil field on the North Slope of Alaska and the construction of the Alaska pipeline are examples of the great expense and difficulty involved in new oil discoveries. Offshore drilling platforms extend the search for oil to the ocean`s continental shelves-those gently sloping submarine regions at the edges of the continents. More than one-quarter of the world`s oil and almost one-fifth of the world`s natural gas come from offshore, even though offshore drilling is six to seven times more expensive than drilling on land. A significant part of this oil and gas comes from under the North Sea between Great Britain and Norway. Of course, there is far more oil underground than can be recovered. It may be in a pool too small or too far from a potential market to justify the expense of drilling. Some oil lies under regions where drilling is forbidden, such as national parks or other public lands. Even given the best extraction techniques, only about 30 to 40 percent of the oil in a given pool can be brought to the surface. The rest is far too difficult to extract and has to remain underground. Moreover, getting petroleum out of the ground and from under the sea and to the consumer can create environmental problems anywhere along the line. Pipelines carrying oil can be broken by faults or landslides, causing serious oil spills. Spillage from huge oil-carrying cargo ships, called tankers, involved in collisions or accidental groundings (such as the one off Alaska in 1989) can create oil slicks at sea. Offshore platforms may also lose oil, creating oil slicks that drift ashore and foul the beaches, harming the environment. Sometimes, the ground at an oil field may subside as oil is removed. The Wilmington field near Long Beach, California, has subsided nine meters in 50 years; protective barriers have had to be built to

prevent seawater from flooding the area. Finally, the refining and burning of petroleum and its products can cause air pollution. Advancing technology and strict laws, however, are helping control some of these adverse environmental effects.

question 1

According to paragraph 1, which of the following is true about petroleum formation?

A Microscopic organisms that live in mud produce crude oil and natural gas.

B Large amounts of oxygen are needed for petroleum formation to begin.

C Petroleum is produced when organic material in sediments combines with decaying marine organisms.

D Petroleum formation appears to begin in marine sediments where organic matter is present.

question 2

In paragraphs 1 and 2, the author’ s primary purpose is to

A describe how petroleum is formed

B explain why petroleum formation is a slow process

C provide evidence that a marine environment is necessary for petroleum formation

D show that oil commonly occurs in association with gas

question 3

Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

A Higher temperatures and pressures promote sedimentation, which is responsible for petroleum formation.

B Deposits of sediments on top of organic matter increase the temperature of and pressure on the matter.

C Increase pressure and heat from the weight of the sediment turn the organic remains into petroleum.

D The remains of microscopic organisms transform into petroleum once they are buried under mud.

question 4

Which of the following can be inferred from paragraph 3 about gushers?

A They make bringing the oil to the surface easier.

B They signal the presence of huge oil reserves.

C They waste more oil than they collect.

D They are unlikely to occur nowadays.

question 5

Which of the following strategies for oil exploration is described in paragraph 4?

A Drilling under the ocean’ s surface

B Limiting drilling to accessible locations

C Using highly sophisticated drilling equipment

D Constructing technologically advanced drilling platforms

question 6

What does the development of the Alaskan oil field mentioned in paragraph 4 demonstrate?

A More oil is extracted from the sea than from land.

B Drilling for oil requires major financial investments.

C The global demand for oil has increased over the years.

D The North Slope of Alaska has substantial amounts of oil.

question 7

According to paragraph 5, the decision to drill for oil depends on all of the following factors EXCEPT

A permission to access the area where oil has been found

B the availability of sufficient quantities of oil in a pool

C the location of the market in relation to the drilling site

D the political situation in the region where drilling would occur

question 8

In paragraph 6, the author’ s primary purpose is to

A provide examples of how oil exploration can endanger the environment

B describe accidents that have occurred when oil activities were in progress

C give an analysis of the effects of oil spills on the environment

D explain how technology and legislation help reduce oil spills

question 9

Look at the four squares [ ] that indicate where the following sentence could be added to the passage. Where would the sentence best fit?

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may move into sandy layers nearby. [] Over long periods of time (millions of years), accumulations of gas and oil can collect in the sandy layers. [] Both oil and gas are less dense than water, so they generally tend to rise upward through water-saturated rock and sediment. [] Oil pools are valuable underground accumulations of oil, and oil fields are regions underlain by one or more oil pools. When an oil pool or field has been discovered, wells are drilled into the ground. Permanent towers, called derricks, used to be built to handle the long sections of drilling pipe. Now portable drilling machines are set up and are then dismantled and removed. When the well reaches a pool, oil usually rises up the well because of its density difference with water beneath it or because of the pressure of expanding gas trapped above it. Although this rise of oil is almost always carefully controlled today, spouts of oil, or gushers, were common in the past. Gas pressure gradually dies out, and oil is pumped from the well. Water or steam may be pumped down adjacent wells to help push the oil out. At a refinery, the crude oil from underground is separated into natural gas, gasoline, kerosene, and various oils. Petrochemicals such as dyes, fertilizer, and plastic are also manufactured from the petroleum. As oil becomes increasingly difficult to find, the search for it is extended into more-hostile environments. The development of the oil field on the North Slope of Alaska and the construction of the Alaska pipeline are examples of the great expense and difficulty involved in new oil discoveries. Offshore drilling platforms extend the search for oil to the ocean`s continental shelves-those gently sloping submarine regions at the edges of the continents. More than one-quarter of the world`s oil and almost one-fifth of the world`s natural gas come from offshore, even though offshore drilling is six to seven times more expensive than drilling on land. A significant part of this oil and gas comes from under the North Sea between Great Britain and Norway. Of course, there is far more oil underground than can be recovered. It may be in a pool too small or too far from a potential market to justify the expense of drilling. Some oil lies under regions where drilling is forbidden, such as national parks or other public lands. Even given the best extraction techniques, only about 30 to 40 percent of the oil in a given pool can be brought to the surface. The rest is far too difficult to extract and has to remain underground. Moreover, getting petroleum out of the ground and from under the sea and to the consumer can create environmental problems anywhere along the line. Pipelines carrying oil can be broken by faults or landslides, causing serious oil spills. Spillage from huge oil-carrying cargo ships, called tankers, involved in collisions or accidental groundings (such as the one off Alaska in 1989) can create oil slicks at sea. Offshore platforms may also lose oil, creating oil slicks that drift ashore and foul the beaches, harming the environment. Sometimes, the ground at an oil field may subside as oil is removed. The Wilmington field near Long Beach, California, has subsided nine meters in 50 years; protective barriers have had to be built to prevent seawater from flooding the area. Finally, the refining and burning of petroleum and its products can cause air pollution. Advancing technology and strict laws, however, are helping control some of these adverse environmental effects.

question 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.

A. Petroleum formation is the result of biological as well as chemical activity.

B. The difficulty of finding adequate sources of oil on land has resulted in a greater number of offshore drilling sites.

C. Petroleum extraction can have a negative impact on the environment.

D. Petroleum tends to rise to the surface, since it is lower in density than water.

E. Current methods of petroleum extraction enable oil producers to recover about half of the world’ s petroleum reserves.

F. Accidents involving oil tankers occur when tankers run into shore reefs or collide with other vessels.