

Questions 1–10

In recent years evidence has accumulated that polyunsaturated fatty acids function in protecting humans and some laboratory animals from diseases of the arteries and heart such as atherosclerosis. In this disease, small patches of fatty material, composed mostly of cholesterol, form on the inside lining of the arteries. As the deposits increase in thickness, they may cut down on the blood flow to the organs supplied by the arteries until the structures are severely damaged. If this occurs in a branch of the coronary artery supplying the heart muscle, that portion of the muscle dies, and the person experiences a painful and sometimes fatal heart attack. Another danger of atherosclerosis is that pieces of the fatty deposits may break free and travel in the bloodstream until they lodge in small vessels and block the flow of blood. This blockage may also cause heart damage, or, if it occurs in the brain, may damage brain cells and lead to a stroke.

- Line (5)
- (10)
1. What does this passage mainly discuss?
(A) Atherosclerosis
(B) Fats
(C) Cholesterol
(D) Heart damage
 2. The word "accumulated" in line 1 is closest in meaning to
(A) accelerated
(B) accrued
(C) circulated
(D) dismissed
 3. The author of the passage describes atherosclerosis as
(A) a reaction to polyunsaturated fatty acids
(B) a disease causing heart damage
(C) a blood disease
(D) a heart attack
 4. The word "deposits" in line 5 refers to
(A) inside lining of the arteries
(B) organs supplied by the arteries
(C) small patches of fatty material
(D) polyunsaturated fatty acids
 5. According to the passage, the parts of the body most directly affected by cholesterol buildup are
(A) the brain cells
(B) the major organs
(C) the arteries
(D) the muscles
 6. The word "this" in line 7 refers to all of the following EXCEPT
(A) the size of the deposits increases
(B) blood flow to the organs is restricted
(C) fatty material dissolves
(D) organs supplied by the arteries are badly damaged
 7. According to the passage, atherosclerosis may cause all of the following EXCEPT
(A) a stroke
(B) a heart attack
(C) blockage of the arteries
(D) cholesterol breakdown
 8. The pronoun "it" in line 12 refers to
(A) heart damage
(B) the flow of blood
(C) a blockage
(D) a stroke
 9. The word "lodge" in line 10 is closest in meaning to
(A) stick
(B) return
(C) penetrate
(D) dissolve

Questions 10–20

- Although most grain crops have light dry pollen and are wind-pollinated, the pollen of other plants including legumes, fruits, and many flowers and vegetables is moist and sticky. It cannot travel on air currents and must be transferred from anther to stigma by external agents. This process is known as cross-pollination. Cross-pollination allows plants to evolve and to adapt to changing environments. Cross-pollination is accomplished mainly by insects and, among pollinators, the honeybee reigns supreme. Bees collect nectar and pollen from flowers to use as food and unwittingly transfer pollen from flower to flower as they go about their work.
- A bee's body is ideally adapted to carry pollen. Its body and legs are covered with stiff, branched hairs, which catch and hold pollen grains. The hind legs are equipped with pollen baskets that are concave areas of the hind leg edged with long curving hairs. In these baskets, the worker bee deposits pollen and carries it back to the hive where it serves as a major food source for the young brood.
- As bees are busy gathering pollen, their bodies become almost entirely covered with sticky pollen grains. Field bees inadvertently transfer pollen from one flower to another as they make their rounds.
- For many plants, cross-pollination is essential. Some fruits, vegetables, and nut trees would be unable to set fruit or would have extremely poor yields without the aid of bees or other pollinators.
- Experiments have proved that plants exposed to bees produce far greater yields than those which are not visited by colonies of bees. Apple orchards are a good example. Most apple growers rent bee colonies in early May to guarantee cross-pollination.

- Line
(5)
- (10)
- (15)
- (20)
10. What is the topic of this passage?
(A) A description of bees
(B) Types of pollen
(C) Cross-pollination by bees
(D) Sources of pollen
11. The word "It" in line 3 refers to
(A) light, dry pollen
(B) a kind of flower
(C) moist, sticky pollen
(D) an external agent
12. The phrase "This process" in line 4 refers to
(A) the transfer of pollen by external agents
(B) the transfer of pollen by wind
(C) the contrast of two types of pollen
(D) the production of moist, sticky pollen
13. According to the passage, cross-pollination may occur in all of the following plants EXCEPT
(A) legumes
(B) grain crops
(C) fruits
(D) flowers
14. The phrase "reigns supreme" in line 7 is closest in meaning to
(A) lives the longest
(B) is the largest
(C) does the best job
(D) is the most numerous pollinating insect
15. According to the passage, why do bees collect pollen?
(A) For use as food
(B) As a complement to nectar
(C) To help plants evolve and change
(D) To cover their bodies
16. We can infer from the passage that bees are well suited to collecting pollen because of
(A) their attraction to flowers
(B) their ability to fly
(C) the structure of their bodies
(D) their ability to work hard
17. The word "edged" in line 12 is closest in meaning to
(A) hidden
(B) bordered
(C) decorated
(D) protected
18. The passage supports all of the following statements EXCEPT
(A) pollen is a source of food for bees
(B) cross-pollination will occur if bees are in an area
(C) cross-pollination is necessary for some plants to produce fruit
(D) bees intentionally cross-pollinate plants
19. The word "yields" in line 19 and line 22 is closest in meaning to
(A) blossoms
(B) production
(C) growth
(D) flavor
20. Why does the author mention apple orchards in paragraph six?
(A) To support the value of bees in cross-pollination
(B) To contrast bees' work with fruit trees and flower gardens
(C) To describe a commercial use of bees
(D) To show that bees work hard

Questions 21–29

The trail west lasted long indeed. From the Missouri River to the West Coast, it ran 2,000-odd zigzag miles, with constant detours for pasture or water. But the distance in miles mattered less than the distance in time. It usually took about four and a half months to reach the Far West, and the trip became a race against the seasons, in which sure timing made the difference between success and failure.

Line
(5)

Late April or early May was the best time to get rolling, though the departure date had to be calculated with care. If a wagon train started too early in the spring, there would not be enough grass on the prairie to graze the livestock. Then animals would start to sicken, slowing up the train and causing alterations of schedule that might bring trouble later. On the other hand, a train that pushed off after other trains were already on the trail found campsites marked by trampled grass and fouled water holes. Worse still, an emigrant company that dallied too long could get trapped at the far end of the journey by early winter blizzards in the coastal mountains. Obviously it was important to get to the departure point on the Missouri at the right moment, and keep pretty close to schedule.

(10)

(15)

21. What is the main point the author makes in the passage?
(A) The trail West was very long.
(B) The spring was the best time to leave for the West.
(C) Early winter blizzards caused travelers problems.
(D) The timing of the departure was extremely important for the trip West.
22. The word "detours" in line 2 is closest in meaning to
(A) changes in the route
(B) stops
(C) backtracking
(D) signposts
23. We can infer all of the following from the passage about the route to the West EXCEPT that
(A) it was not direct
(B) it included many stops
(C) it required careful planning
(D) it was a short, easy trip
24. According to the passage, all of the following were possible problems for those who departed late EXCEPT
(A) winter snow storms in the mountains
(B) spoiled campsites
(C) unusable water holes
(D) losing the way
25. According to the passage, schedules of those who departed early might need to be changed because of
(A) bad weather
(B) poor campsites
(C) lack of pasture for the animals
(D) broken wagons
26. The word "fouled" in line 13 is closest in meaning to
(A) empty
(B) frozen
(C) forgotten
(D) polluted
27. We can infer from the passage that travelers wanted to reach their destinations
(A) by fall
(B) by mid-summer
(C) by late spring
(D) during the winter
28. According to the passage, the wagon trains departed from
(A) the West Coast
(B) somewhere along the Missouri River
(C) the coastal mountains
(D) the prairie trail
29. The word "dallied" in line 14 is closest in meaning to
(A) traveled
(B) stocked up
(C) delayed
(D) grazed

Questions 30–39

- Beginning about 1670, on the stormy, windswept peninsula of Cape Cod, a local dwelling type developed that became a continuing feature of the landscape into the nineteenth century and beyond. Inhabitants of small fishing villages transformed the one-room-and-loft house of the Pilgrims into snug, ship-shape cottages. Generally facing south to catch the winter sun, and nestled against a hill for protection against the hostile elements, the structures rested on wooded sills without foundations in order to ride the shifting sands the same way that schooners rode the waves. If a site happened to blow away, the sturdy house could be trundled across the dunes, or even floated to a new location. A recognizable type by the late 1700s, the Cape Cod cottage persisted with minor variations through the first half of the 1800s. Newlyweds commonly erected a three-quarter house, intending to enlarge it with the arrival of children. Thrifty families occasionally built double houses in order to share an end wall. Some cottages sported bowed or gambrel roofs, and details that reflected the influences of the Federal and Greek Revival styles. The era of the authentic Cape Cod cottage ended around 1850 when the advent of the stove eliminated the massive chimney block that had previously anchored the house to its site. At that time, home-builders also had to import precut lumber from Maine. Thoreau explained the reason, "The old houses . . . are built of the timber of the Cape, but instead of the forest in the midst of which they originally stood, barren heaths . . . now stretch away on every side."
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- (10)
- (15)
- (20)
30. What does this passage mainly discuss?
(A) The development of the Cape Cod house
(B) The effect of environment on building
(C) Cape Cod families
(D) Living conditions in Cape Cod
31. According to the passage, when did the Cape Cod house first appear?
(A) In the late 1600s
(B) In the 1700s
(C) In the 1800s
(D) In 1850
32. The word "hostile" in line 6 is closest in meaning to
(A) unnatural
(B) unfriendly
(C) mitigating
(D) bland
33. The author of the passage states that the early Cape Cod house was built without foundations in order to
(A) keep the cost of building low
(B) increase the mobility of the house
(C) allow it to face south
(D) better withstand the winter cold
34. It can be inferred from the passage that a precursor of the Cape Cod cottage was
(A) Federal Style houses
(B) Greek Revival houses
(C) loft houses of the Pilgrims
(D) schooners of the North Atlantic
35. The word "trundled" in line 9 is closest in meaning to
(A) rebuilt
(B) moved
(C) redesigned
(D) enlarged
36. The word "Thrifty" in line 12 is closest in meaning to
(A) Large
(B) Tired
(C) Economical
(D) Energetic
37. According to the passage, what was the effect of the appearance of stoves in Cape Cod cottages?
(A) Heating was more expensive.
(B) The large chimney block was no longer needed.
(C) New roofs were designed.
(D) Houses were more sturdily built.
38. Thoreau's quotation in lines 19–21 commented on
(A) the depletion of natural resources
(B) the excellence of the original construction material
(C) the need for more open land
(D) the growing economy of Maine
39. The author indicates that the era of the authentic Cape Cod house ended in part due to which of the following reasons?
(A) Windstorms on the sandy house sites
(B) Lack of local building material
(C) Larger families in need of larger houses
(D) The growing influence of newer architectural styles

Questions 40–50

- The elephant seal, an inhabitant of the Pacific waters off the coast of California, is as at home at depths of nearly a mile as it is on land. Marine biologist Dr. Burney Le Boeuf reports that elephant seals dive as deep as 5,000 feet and stay submerged for as long as two hours, and that they make these dives regularly. How do these animals stay submerged for so long? And why do they dive so relentlessly? Answers to these questions are slowly emerging from data acquired through new underwater technology and through experiments with video equipment fitted onto the elephant seals during their dives.
- (5)
- (10) Elephant seals do not rely on oxygen from the lungs to sustain them during long dives (as diving birds and turtles do), Le Boeuf explains. Rather, the oxygen is stored in blood and muscle. The lungs of the smaller Weddell seals (also deep sea divers) actually collapse at from 30 to 40 meters on the way down and reinflate at the same level on the ascent. Biologists believe this also happens in elephant seals.
- (15) When they dive deep, marine mammals bring down a vast auxiliary supply of oxygen in their blood. That is possible, according to Le Boeuf, because blood constitutes as much as 20 percent of their body weight in comparison with only 7 percent in humans. What's more, research by Jesper Qvist of Herlev Hospital in Copenhagen suggests that the spleen of Weddell seals may double as a scuba tank. According to this theory, the organ serves as a reservoir of oxygen-rich red blood cells which, under pressure, are squeezed into the circulatory system. Qvist and collaborators discovered that the organ is abnormally large in Weddell seals, equaled only in southern elephant seals. The idea is not unprecedented: racehorses also use the spleen to shunt oxygen-rich cells into circulation during exertion. Adding to the seals' reserve, a molecule known as myoglobin enables them to store oxygen
- (20) in their muscles.
- (25) Though masters at hoarding oxygen for their submarine plunges, aquatic mammals cannot carry down an infinite supply. Consequently these animals conserve oxygen by lowering their metabolic rate. At Long Marine Lab, where Le Boeuf's team does most of its indoor work, a sophisticated new probe measures
- (30) how deep the seals go; it also tracks their swim velocity, heart rate and body temperature.
- (35) Le Boeuf's instruments have documented a number of startling changes in metabolism during diving. Elephant seals lower their temperature by from 5 to 6 degrees Fahrenheit before long dives. At depth, they shut off circulation to the kidneys, stomach, and other organs, conserving more oxygen. Meanwhile, their heart rates slow from 120 beats per minute at the surface to as low as 6 per minute on the bottom. For brief spells, elephant seals have even been clocked at 2 beats per minute.
- (40) In addition, the elephant seals never seem to sleep. Le Boeuf's recorder revealed that elephant seals were diving continuously, 24 hours a day, week after week, for as much as eight months at a time. Researchers look to new camera equipment to answer more questions about these mysterious mammals of the deep.

40. What does the passage mainly discuss?
(A) New aquatic video equipment
(B) The differences between Weddell seals and elephant seals
(C) The advances in marine biology research
(D) The unusual abilities of elephant seals
41. The phrase "at home" in line 2 is closest in meaning to
(A) friendly
(B) comfortable
(C) attractive
(D) reliable
42. The word "sustain" in line 9 is closest in meaning to
(A) accompany
(B) support
(C) increase
(D) release
43. The word "auxiliary" in line 14 is closest in meaning to
(A) rich
(B) frivolous
(C) reserve
(D) heavy
44. The phrase "The idea" in line 22 refers to
(A) the behavior of racehorses
(B) the pressure of the water during a dive
(C) the function of the spleen to conserve oxygen
(D) the percentage of body weight blood makes up in the seals
45. The information in paragraph 5 describes which of the following features of elephant seals?
(A) How they conserve oxygen through metabolic changes
(B) Why they dive so deep
(C) Why they sleep so little
(D) Their relation to Weddell seals
46. According to the passage, changes in metabolism of elephant seals during deep dives include all of the following features EXCEPT
(A) deep sleep
(B) lower body temperature
(C) reduced heart rate
(D) reduced circulation to major organs
47. The word "reservoir" in line 19 is closest in meaning to
(A) storehouse
(B) measure
(C) producer
(D) incubator
48. The passage mentions all of the following as factors that enable elephant seals to make long dives EXCEPT
(A) having a specially developed spleen
(B) using oxygen from their lungs
(C) lowering their metabolic rate
(D) storing oxygen in their blood and muscle
49. We can infer from the passage that Weddell seals and elephant seals
(A) have a similar physiology
(B) are the same size
(C) are fierce competitors
(D) have extraordinary lung capacity
50. According to the passage, elephant seals sleep
(A) sporadically
(B) incessantly
(C) almost never
(D) on land