



READING TEST

35 Minutes – 40 Questions

DIRECTIONS: There are several passages in this test. Each passage is accompanied by several questions. After reading a passage, choose the best answer to each question and fill in the corresponding oval on your answer document. You may refer to the passages as often as necessary.

Passage I

PROSE FICTION: This passage is adapted from the novel *The Magic Keys* by Albert Murray (©2005 by Albert L. Murray).

In the passage, the term *stopgap gig* refers to a temporary position as a member of a band.

When I finally told Taft Edison about the time I had spent on the road with the band, I said, Man, it began as an incredible summer transition job that I needed because I had to get enough cash to supplement 5 the graduate school fellowship grant I had been awarded. I said, Man, nothing like that had ever crossed my mind before. I said, Man, when I left home for college my main musical involvement beyond listening and dancing to it was humming and whistling it.

10 I said, Man, when Hortense Hightower told me what she told me about suggesting me as a stopgap replacement when the Bossman Himself called and just happened to mention in passing that Shag Phillips had given notice, I couldn't believe it. But she said, Don't

15 worry about it because he doesn't go around looking for superstars. He makes his own. Not because it's a game or some kind of challenge to prove anything about his ingenuity as some kind of mentor either. She said, He hires his musicians because he has decided that he

20 wants to find out what he can do with something he's heard them playing. And that is when she also said, Believe me when I tell you that the very fact that he remembered you as soon as I mentioned you is what counts, because that means that you did something that

25 caught his ear—not necessarily something musically technical either, something that goes with something he's got filed away in that steel-trap mind of his. You've heard about those big-time college profs talking about those linguistic experts that can listen to half a 30 sentence and tell you where you come from? Well,

that's him when it comes to music.

I don't remember ever really touching, let alone trying to fool around with, the bass fiddle before Hortense Hightower gave me one in the spring of my 35 junior year.

I had never thought of Taft Edison as having ever had any serious personal professional interest in dance bands. As far as I knew, none of the music school courses had anything whatsoever to do with becoming 40 bandleaders and arrangers/composers like the Bossman Himself.

My impression of Taft Edison from the very outset was that his ambition was to create compositions based on down-home sacred and secular music, including

- 45 workaday chants and hollers, that would be performed in concert halls by concert hall-type instrumental and vocal groups and philharmonic orchestras. Because when I arrived on the campus as a freshman, he was a junior who impressed me more than anybody else in the
- 50 School of Music because he was the student who conducted the school's widely popular college marching band.

But although there were also two student-led dance bands on the campus at that time, I can't remem-

- 55 ber having ever seen him playing with either of them. Not that I ever got the impression that he disliked or had no interest in that kind of music, or that his attitude was one of condescension, as was the case of many conservatory-oriented students at the time. Not at all.
- 60 Because when you saw him at socials and at benefit dances, he was always up-to-date on all the latest steps. And also when he stopped by the Mainstem Lounge, where you used to listen to the late-night radio broadcasts from such then famous nightspots as the Savoy
- 65 Ballroom and the Cotton Club in Harlem and the Grand Terrace on the South Side of Chicago in those days, he could identify as many bands and sidemen as instantaneously as any of the dance band musicians, record collectors, and patent-leather avenue sharpies as happened
- 70 to be there at the time.

So when I told him about my stopgap gig with the band, I didn't know what his response would be, but I did so because I had decided that I had better mention it myself rather than running the risk of having him find 75 out about it just incidentally somehow and wonder why I hadn't mentioned it on my own and why I hadn't yet said anything at all about ever having played any musical instrument.

But as I should have remembered from his com-80 pletely unsurprised and ever so casual response when I introduced myself to him on Fifth Avenue that day, he didn't register any surprise at all. Anyway, all he said was that he hadn't heard the band during the period between Shag Phillips and Scratchy McFatrick.



- 85 But, he said, I do remember hearing something about some college boy filling in for a while. So that was you! I myself would have had a hard time turning down the chance to hit the trail with that fabulous crew for a while. Man, I can just imagine it. Man, when I
- 90 woke up every morning and realized why I was wherever I was I would have had to pinch myself.

- 1. Regarding the musical education of the narrator after high school, the passage:
- A. states that he was a conservatory student focusing on music composition.
 - B. states that he never took music lessons, although most of his friends did.
- C. does not specify what he studied in college but indicates his personal interest in music.
- D. does not specify what he studied in college but makes clear that he planned to study music one day.
- 2. The fifth and sixth paragraphs (lines 42-70) primarily serve to:
 - F. reveal the narrator's impressions of Taft Edison's varied musical interests.
 - G. describe Taft Edison's repeated efforts to impress the narrator with his musical knowledge.
 - H. identify several venues the narrator and Taft Edison visited together as students.
 - provide evidence for the popularity of the narra-I. tor's dance band.
- 3. According to the passage, how does the narrator feel about telling Taft Edison about the stopgap gig?
 - A. Eager; he remembers that Edison admires the Bossman.
 - B. Uncertain; he's unsure how Edison will respond but decides to tell Edison before he finds out some other way.
 - Hesitant; he's uncertain whether Edison still cares C. about the Bossman's band.
 - D. Anxious; he wants to tell Edison but is worried that Edison won't be able to keep the news to himself.
- 4. The passage indicates that when joining the Bossman's band, the narrator was replacing:
 - F. Taft Edison.
 - G. Hortense Hightower.
 - H. Shag Phillips.
 - J. Scratchy McFatrick.

- 5. According to the passage, the narrator's first memory of playing the bass fiddle was when:
 - A. Taft Edison introduced the narrator to down-home sacred and secular music.
 - the narrator, impressed by the marching band **B**. director, decided to pick one up.
 - C. the Bossman invited the narrator to join his band as a stopgap replacement.
 - D. Hortense Hightower gave the narrator a bass during his junior year of college.
- The narrator most strongly implies that he was initially impressed by Taft Edison as a result of:
 - what he had heard about Taft Edison from Hortense F. Hightower.
 - G. the narrator's knowledge of what the music school courses cover.
 - seeing Taft Edison conduct the school's marching H. band.
 - J. listening to Taft Edison talk about music at the Mainstem Lounge.
- 7. The narrator suggests that Taft Edison differed from many other conservatory-oriented students in that he:
 - A. played primarily with philharmonic orchestras.
 - B. was more ambitious about his studies.
 - C. couldn't play more than one instrument.
 - D. wasn't condescending toward dance band music.
- 8. The narrator states that when he told Taft Edison about playing with the Bossman's band, Edison:
 - F. offered a casual response.
 - G. seemed angry and jealous.
 - H. appeared uncomfortable.
 - J. changed the topic of discussion.
- 9. In the context of the passage, lines 82-84 most strongly suggest that Taft Edison hadn't heard:
 - A. the Bossman's band while the narrator was playing with it.
 - Shag Phillips and Scratchy McFatrick when they **B**. played with the Bossman.
 - the Bossman's band prior to the narrator joining C. the band.
 - D. dance music he liked until he heard the Bossman's band
- 10. The last sentence (lines 89-91) can best be described as referring to:
 - F. an opportune job opening that one of the passage's characters is forced to turn down.
 - G. a hypothetical opportunity that one of the passage's characters savors.
 - H. a turning point in the career of one of the passage's characters.
 - J. a high-profile performance at which one of the passage's characters regrets failing.



Passage II

SOCIAL SCIENCE: This passage is adapted from the article "Mutant Maps" by Peter Weiss (©2006 by Science Service).

The numerals 1623 stared out from the title page of a rare Shakespeare book. Printed in a quaint typeface, those digits left no mystery about the publication date of that prized volume.

5 "People want to know when ideas were developed. In the history of society in general, dates are important," says S. Blair Hedges of Pennsylvania State University.

An unexpected inspiration from genetics recently 10 led Hedges—a biologist with a penchant for old books and maps—to develop a new way to sleuth missing dates for printed works.

His work indicates that the print quality declines with the steady aging of the blocks and plates used in 15 the printing process, not with how often they are used, as most specialists had suspected. As biologists calculate species ages from the accumulation of genetic mutations, or molecular clocks, Hedges employs a "print clock."

20 There were more than 3 million books printed on hand-operated presses using woodblocks and copperplates from the 1400s to the mid-1800s, and many of those books weren't dated, Hedges notes.

About a year and a half ago, Hedges was examin-25 ing copies of a 16th-century book of Caribbean-island maps printed from woodblocks. Printers from this era would often use the same woodblock or plate in each subsequent edition of a book.

This book—known as *Isolario* by Benedetto 30 Bordone—appeared in four editions: three dated 1528, 1534, and 1547, and one without a date. For 200 years, rare-book specialists have been debating when the undated edition was printed.

As Hedges looked at the various editions, patterns 35 of defects in the maps caught his eye. He noticed gaps here and there in the lines on the maps. "In the first edition, there were very few. The later-dated editions had progressively more breaks." Hedges recalls, "I thought these line breaks are kind of like genetic mutations."

40 In organisms, the genetic code changes haphazardly, or mutates, at random intervals as a result of chemical reactions or other insults, and the resulting mutations in DNA accumulate over time. Biologists can calculate the average rate of mutation over millions of

45 years of evolutionary transformation. They can then use that average to estimate when one species diverged from others. 3

As Hedges pored over the *Isolario*, it occurred to him that random defects in wood blocks—like genetic 50 mutations—may also have accumulated over the years at a constant average rate. If so, then bibliographers could exploit that rate to date documents relative to those with known publication dates.

Hedges knew that line breaks in old wood-block 55 prints resulted from cracks in the blocks' raised ridges, which produce the lines. The underlying cause—the drying of the wood—would have taken place steadily over time.

In prints made from copperplates, Hedges 60 observed a different pattern of change. Printmakers created designs on copperplates by engraving them. Hedges noticed that the lines of prints from a specific plate are typically thinner in later editions than in earlier ones, so the overall image in later editions appears 65 faded.

Hedges claims a steady process of corrosion as copperplates sat in storage could account for the observed decline in print quality. When the time came to reuse a plate, the printer would have had to scrub and

70 polish its pitted surface. Because engraved grooves narrow with depth, stripping off the top layers of the plate's surface would have made such grooves narrower and, therefore, the lines of the prints thinner.

Hedges says that his tests so far support the print-75 clock hypothesis. He found 23 copies of *Isolario*, including all the editions, in rare-book libraries. He then counted the number of line breaks in the 112 map prints contained in each book. When he analyzed the data, he found that a steady accumulation rate of line

80 breaks per year matched up with the publication dates of the three successive dated editions.

He next turned to the undated copy of *Isolario*. That edition had more line breaks than any of the others. Hedges calculated that it was published in Feb-85 ruary 1565, plus or minus 16 months.

Conveniently, another characteristic of the undated Isolario edition—a small, intricate pattern on its title page, called the printer's mark—gave Hedges an independent way to estimate that date. He took advan-90 tage of computerized-image-analysis methods that are used by medical scientists. He applied them to highresolution digital images of printer's marks from Isolario and other dated books from the same Renaissance printer. His second estimate for the undated Isolario 95 was April 1565, plus or minus a year.

was reprir 1965, pras or minus a year.



- 11. It can most reasonably be inferred from the passage that to determine the print date of an undated book using Hedges's method, a researcher must analyze:
 - A. at least one edition of the book that includes a printer's mark.
 - the woodblocks or copperplates used to print the B. book.
 - C. modern versions of the maps or graphics printed in the book.
- D. at least a few editions of the book with different known print dates. and a distance to and the tone income in the
- 12. Does the passage indicate how most bibliographers have reacted to the possibility that Hedges has determined the print date of an undated edition of Isolario ?
 - F. Yes; they're intrigued by Hedges's findings and are supportive of further testing of Hedges's hypothesis.
- G. Yes; they believe Hedges has misdated the edition, although they themselves are unsure of a way to determine the date.
 - H. Yes; they believe Hedges's hypothesis is more useful for dating books printed from woodblocks than dating those printed from copperplates.
- J. No; the passage doesn't provide information about most bibliographers' reaction to Hedges's findings.
- 13. In the passage, *Isolario* is described as a:
 - A. novel that includes several maps and is set in the Caribbean islands.
 - B. series of travel drawings, essays, and poems by an Italian explorer.
 - C. book of maps of the Caribbean islands.
 - **D.** rare Shakespeare book.
- 14. Which of the following observations triggered Hedges's hypothesis regarding how to determine the print date of the undated edition of Isolario ?
 - F. Noticing gaps in the lines on the printed pages, especially in later-dated editions
 - G. Perceiving thin, wavy lines on several of the printed pages in the earliest-dated edition
 - Noting skipped words on the title page in the H. latest-dated edition
 - Distinguishing that the later-dated editions included fewer sketches and maps than did the J. earliest-dated edition

- 15. In the context of the passage, the ninth paragraph (lines 40-47) primarily serves to:
 - A. describe one of Hedges's findings.
 - B. explain in detail how new species develop as a result of millions of years of evolutionary transformation.
 - C. provide a brief overview of a scientific process that Hedges uses as a point of comparison.
- D. shift the focus of the passage from finding the print date for undated books to understanding genetics. 0.14
- 16. The passage indicates that if copperplates were reused for printing, the copperplates would've had to have been:
 - F. stored in a low-humidity room.
 - G. chemically treated periodically to prevent surface corrosion.
 - H. cleaned and polished prior to each new print run of a book.
 - J. reengraved regularly.
- 17. As it is used in line 89, the word independent most nearly means:
 - A. strong willed.
 - B. voluntary.
 - C. moderate.
 - D. separate.
- 18. The author of the passage identifies Hedges as a:
 - F. mapmaker who has an interest in old printing presses and printer's marks.
- G. bibliographer of old books who has an interest in genetics.
 - H. biologist who has an interest in old books and maps.
 - J. medical student who has an interest in computerized image analysis of old books.
- 19. In the passage, Hedges attributes the degradation over time of woodblocks used in printing primarily to:
 - A. the wood being eaten by pests such as termites.
 - **B.** excessive sanding by printers.
 - C. warping due to high humidity.
 - **D.** the drying of the wood.
- 20. In the passage, the hypothesis Hedges tested through dating an undated edition of Isolario is called the:
 - F. line-break hypothesis.
 - G. print-clock hypothesis.
 - **H.** mutation hypothesis.
 - J. rate-of-change hypothesis.

ACT-72G



Passage III

HUMANITIES: Passage A is adapted from the essay "Walking" by Linda Hogan (©1990 by Linda Hogan). Passage B is adapted from the essay "Cold-Comfort Farming" by Arlo Crawford (©2008 by The New York Times).

Passage A by Linda Hogan

I saw it first in early summer. It was a green and sleeping bud, raising itself toward the sun. Over the summer this sunflower grew into a plant of incredible beauty, turning its face daily toward the sun in the most 5 subtle of ways, in community with rain, mineral, mountain air, and sand.

I was an outsider. I only watched. I had a small understanding, nothing more than a shallow observation of the flower, insects, and birds. But they knew 10 what to do, how to live. An old voice from somewhere, gene or cell, told the plant how to evade the pull of gravity and find its way upward, how to open.

There are other summons and calls. Once a century, all of a certain kind of bamboo flower on the same 15 day. Whether they are in Malaysia or in a greenhouse in Minnesota makes no difference, nor does the age or size of the plant. They flower. Some current of an inner language passes between them. They are all, somehow, one plant, each with a share of communal knowledge.

20 John Hay, in *The Immortal Wilderness*, has written: "There are occasions when you can hear the mysterious language of the Earth, in water, or coming through the trees, emanating from the mosses, seeping through the undercurrents of the soil, but you have to 25 be willing to wait and receive."

Sometimes I hear it talking. Once, in the redwood forest, I heard a beat, something like a drum or heart coming from the ground and trees and wind. That underground current stirred a kind of knowing inside 30 me, a kinship and longing, a dream barely remembered that disappeared back to the body.

Tonight I walk. I am watching the sky. I think of the people who came before me and how they knew the placement of stars in the sky, watched the moving sun 35 long and hard enough to witness how a certain angle of light touched a stone only once a year.

It's winter and there is smoke from the fires. The square, lighted windows of houses are fogging over. It is a world of elemental attention, of all things working 40 together, listening to what speaks in the blood.

Passage B by Arlo Crawford

My parents are organic farmers, but springtime makes my mother sad and anxious. In the winter, the duties are reasonable: the barn cats need food, and the eggs have to be collected. But the first sprouts are 45 needy and will only increase their demands as the

season wears on. Farming asks everything of you eventually.

3

Several years ago when I was living in New York after college, I would sometimes walk through the 50 greenmarket in Union Square. The farmers there seemed sort of desperate; vegetables are never perfect and their customers were accustomed to being picky.

Then, after three years in the same job, I watched my boss drive his business into the ground. I didn't

55 have a lot of options, so I moved back to my parents' farm in central Pennsylvania. I was isolated and I missed my friends. But after a few months I met a girl from a nearby farm. She had blond braids and tattoos that showed between her tank top and cutoffs. A few

60 days later she invited me over. We looked at the fields and she bragged about the soil.

If my parents, with years of struggle between them, were revolutionaries, my girlfriend and I were vegetable-growing mercenaries. We were there for the

65 thrill. I drove a stripped-down pickup truck, with a tangle of harvest knives and baling wire on the rusted-through floorboards. I stank of compost and never brushed my teeth. When we went to a restaurant, the civilians all averted their gaze. We looked at the limp 70 parsley garniching their plates and rolled our ours.

70 parsley garnishing their plates and rolled our eyes.

Soon the season was over. Potatoes and parsnips and rutabagas were stacked in the cellars. The fields were burned over with frost. We decided to go to Peru to have an adventure. When we got back, we realized

75 that all our pictures were of vegetables. Old men selling huge sheaves of green grain. A woman digging cassava root. Donkeys toting stiff bundles of sugar cane.

It's hard, tiring, often demoralizing work to make vegetables. When I was little, my mother would some-80 times hide away in an old chicken coop at the bottom of the yard to cry. As a farmer, you can pour so much into the vegetables that you feel obsessively devoted to them. Farming isn't about communing with nature—it's just a job. But if you immerse yourself in that job and

85 things don't work out, you cry.

A farm dies once a year. Sometimes it's a lingering sickness; sometimes a hard frost takes it all in one night. There's no mystery to it. If a farmer wondered why, he would never pick up his tools. And then no one 90 would eat at all.

Questions 21-24 ask about Passage A.

- 21. Hogan mentions the flowering of a certain kind of bamboo in order to illustrate the:
 - A. rarity with which one species of bamboo produces a flower.
 - **B.** uncanny ability bamboo has to grow in a variety of climates.
 - C. benefits of growing exotic plants in a greenhouse.
 - **D.** mysterious interconnectedness of things in the natural world.



- 22. As it is used in line 5, the word *community* most nearly means:

 - **F.** public. **G.** joint ownership.

 - J. related individuals.
- 23. Hogan refers to "an old voice" (line 10) to suggest that the sunflower had:
 - A. been planted by an elderly gardener.
 - **B.** bloomed every spring for decades.
 - C. been genetically programmed to grow.
 - D. welcomed the narrator every year.
- 24. Hogan most likely quotes from the book The Immortal Wilderness to support her point that:
 - F. Earth speaks in a language human beings simply don't hear.
 - G. deeply communing with Nature requires patience and attentiveness. H.
 - authors besides herself have written insightful books about being in the outdoors.
 - people should enjoy the outdoors before the cold of winter takes control.

Questions 25-27 ask about Passage B.

- 25. Based on Crawford's account, the most likely reason springtime made his mother sad and anxious was that she:
 - A. felt isolated and missed her friends who were preoccupied with their own farms.
 - B. was remembering that a farm dies once a year despite all of her best efforts.
 - C. didn't feel a connection to the soil the way that her husband and son did.
 - D. knew the season signified the beginning of hard work that sometimes ended in failure.
- 26. According to Crawford, the farmers in Union Square seemed sort of desperate because:
 - F. an underground current in the wind stirred a kind of kinship and longing inside each of them.
 - G. back on the farm the first sprouts needed increasingly more attention as the season wore on.
 - H. the vegetables sometimes spoiled while being transported from their farms to New York City.
 - J. their customers were picky about the quality of the vegetables.

- 27. Crawford elaborates on the growing season being finished by mentioning the:
 - A. lighted windows of the houses fogging over and the smoke from the fires.
 - types of root vegetables stacked in the cellar and B. the frost-covered fields.
 - C. rusted-through floorboards of his pickup truck that had worn out with use.
 - D. old chicken coop at the bottom of the yard where his mother went to cry. and solid process and so as all specific here.

Questions 28-30 ask about both passages.

- 28. One of the most obvious differences between Hogan's and Crawford's point of view is that Hogan:
 - F. doesn't have a job, so she can waste time watching a sunflower grow, while Crawford spends most of his time working for a living.
 - G. realizes that hearing a sound like a drum in the ground, trees, and wind was just a dream, while Crawford is literally attuned to Earth's sounds.
 - H. talks about the natural world with a sense of reverence and awe, while Crawford suggests a connection based largely on necessity.
 - has no memory of the people who have lived before her, while Crawford talks fondly about his J. parents' influence.
- 29. Which of the following methods of support do both authors use to convey their ideas?
 - A. Personal anecdotes and opinions
 - B. Quotations from environmental experts
 - C. Sarcasm and exaggerated comparisons
 - D. Definition of terms with illustrative examples of each one
- a tori and a sea bhairt a the Malaoutha guallaraith a 30. Based on these two passages, which pair of phrases best compares Hogan's relationship to Nature and Crawford's relationship to Nature?
 - Aimless walker versus idle dreamer F
 - G. Fascinated observer versus pragmatic worker
 - H. Casual scientist versus thoughtful landowner
 - Indifferent outsider versus sarcastic farmer J.

ACT-72G



Passage IV

NATURAL SCIENCE: This passage is adapted from the article "Flotsam Science" by Sid Perkins (©2007 by Science Service).

In January 1992, a freighter crossing the Pacific ran into rough weather. As the ship heaved through the storm-tossed seas, several cargo containers-including one filled with tens of thousands of plastic tub toyscame loose, fell overboard, and broke apart. Seven months after the spill, the plastic ducks, beavers, turtles, and frogs began washing up on beaches. Scientists

Even today, members of the tub-toy armada occa-10 sionally make landfall. The date and place of each of the nearly 1,000 toys recovered to date provide a data point, says Curtis Ebbesmeyer, a retired oceanographer in Seattle. Most of the drifters have remained stuck in the Pacific Subarctic Gyre, a set of deep-water and sur-

who track ocean currents were ecstatic.

15 face currents spanning an area the size of the continental United States that generally flows counterclockwise around the northern Pacific Ocean.

In most of the world, the dispersal of flotsam (floating debris) isn't of major interest to researchers. 20 But along the bustling trade routes that link eastern Asia to North America, the stuff that drops off ships is enabling scientists to fill in details of how the Pacific Subarctic Gyre works.

The ocean is teeming with a variety of scientific 25 instruments. When measuring surface currents, however, these devices have their limitations. Probes specifically designed to ride surface currents have sensors which can quickly become obstructed by algae, barnacles, and other organisms that thrive in the sunlit 30 portion of the ocean.

What's more, probe batteries fail within months.

Generally, probes haven't traveled more than 1,000 km in that time, says Thomas C. Royer, an oceanographer at Old Dominion University in Norfolk, Va. That's only 35 a small fraction of the path around the gyre.

"We've never had a good handle on how long it takes [floating] objects to go around the gyre, or even if they do," Royer adds.

To map the currents and clock their speeds, 40 Ebbesmeyer, Royer, and their teammates circumvented the disadvantages of modern electronic probes by harnessing the power of floating junk. Because the Pacific is crisscrossed by major trade routes, "there's a lot of stuff out there," Ebbesmeyer notes. Many of those items can be traced back to specific spills, and if 45

the lost objects are durable, they can drift in currents for years.

The team's oldest data points-and the most ecofriendly-result from the eruption of Alaska's 50 Mount Katmai on June 6, 1912. Some of the pumice spewed by that volcano fell into the Gulf of Alaska. In



mid-August 1914, large chunks of that frothy rock washed up on beaches of British Columbia's Queen Charlotte Islands.

Each entry in the researchers' flotsam database 55 includes the latitude and longitude of the place where the item entered the ocean and of the site where it was discovered—in essence, a start point and an end point.

Because of the sheer volume of flotsam data, the 60" scientists have been able to discern the typical configuration and average speed of the currents in the Pacific Subarctic Gyre, even though their overall pattern continually shows slight shifts and speed changes in response to the passage of large ocean eddies or varia-

65 tions in weather patterns caused by climate cycles such as El Niños.

Results of computer simulations indicate that floating objects can be swept along several paths in the Pacific Subarctic Gyre. An item following the shortest

70 loop would make a circuit in just over 2 years, the researchers estimate, and items taking the longest route would make a lap every 3.6 years. The average trip around the gyre took 3 years. This conclusion fits with observed recoveries of items that came at intervals of

75 several years rather than being spread evenly through time.

According to the simulations, current speeds in the gyre range between 11 and 13 cm per second, or about one-fifth the speed of a typical human swimmer.

Once the researchers came up with these answers, 80 they analyzed long-term records of water temperature and salinity at various sites in the North Pacific. They observed 3-year-long cycles in the data-"a pattern nobody noticed until the ducks came along," says 85 Royer.

Studying the dispersal patterns of flotsam is "interesting and creative," says Howard J. Freeland, an oceanographer at the Institute of Ocean Sciences in Sidney, British Columbia. However, he cautions, the

- 90 date of recovery of an item found on a beach may not reflect when it actually washed ashore. Ebbesmeyer and his colleagues "have good measurements, but I'm not sure of what," he notes.
- 31. Which of the following questions does the passage NOT answer?
 - A. About how large of an area does the Pacific Subarctic Gyre cover?
 - **B.** In addition to toys, what other types of cargo fell overboard during the 1992 spill?
 - C. Approximately how many toys have been recovered from the 1992 spill?
 - **D.** Where did the flotsam that has provided the team with the oldest data points originate?



- **32.** According to the passage, one disadvantage to using scientific probes to measure surface currents is that such probes:
 - **F.** have heavy batteries that may cause the probes to sink after a short time.
 - G. have sensors that are vulnerable to currentdwelling organisms.
 - **H.** interfere with scientific instruments already floating in the ocean.
 - J. are sensitive to the bright sunlight that hits the ocean surface.
- **33.** If the eighth paragraph (lines 48–54) were deleted, the passage would primarily lose an example that:
 - **A.** indicates some of the flotsam scientists studied came from natural sources.
 - **B.** suggests natural sources of flotsam provide more accurate data than do artificial sources.
 - C. explains how natural disasters can affect ocean currents.
 - **D.** provides specific information about the location of the Pacific Subarctic Gyre.
- 34. The passage indicates that scientists have been able to determine the typical configuration and average speed of the Pacific Subarctic Gyre's currents despite:
 - **F.** strong storms, which make direct observation of the currents impossible.
 - G. ship traffic in the trade routes that interferes with the currents' flow.
 - **H.** a lack of flotsam and probes, which results in an insufficient amount of data.
 - **J.** passing ocean eddies and changing weather patterns that alter the currents.
- **35.** In the passage, Freeland notes that a problem with the flotsam database is that:
 - A. the physical properties of the flotsam aren't recorded.
 - **B.** it only includes data collected from the Pacific Ocean.
 - C. it isn't always possible to determine when flotsam enters the water.
 - **D.** the data may not reflect when flotsam actually washes ashore.

ACT-72G

- **36.** Within the passage, the main purpose of the statement in lines 7–8 is to:
 - **F.** suggest the scientists' reaction to the 1992 spill was inappropriate.
 - G. reveal that scientists often observe ocean currents from cargo freighters.
 - **H.** transition to the discussion of the spilled toys' scientific significance.
 - J. introduce a conflict between researchers and the shipping industry.
- 37: According to the passage, what happened to most of the toys spilled in the 1992 incident?
 - A. They're still drifting in the Pacific Subarctic Gyre.
 - **B.** They drifted to Asia on the trade routes.
 - C. They washed ashore but were returned to the Pacific Subarctic Gyre for further study.
 - **D.** They washed up on the beaches of the Queen Charlotte Islands.
- **38.** According to the passage, at what point do probes used to measure surface currents in the Pacific Subarctic Gyre usually lose power?
 - **F.** Before they reach the gyre
- G. Within months after entering the gyre
 - **H.** After one trip around the gyre
 - J. Within two to three years after leaving the gyre
- **39.** As it is used in line 42, the phrase "harnessing the power of" most nearly means:
 - A. taking advantage of.
 - **B.** reining in the influence of.
 - C. controlling the energy produced by.
 - D. exploiting the authority of.
- **40.** The author compares the speed of the Pacific Subarctic Gyre's currents to the speed of a typical human swimmer most likely to:
 - **F.** provide a frame of reference that might help readers understand the currents' speed.
 - G. suggest that the currents are too powerful for the average person to swim through.
 - H. explain why humans are needed to obtain an accurate measurement of the currents' speed.
 - J. help describe the author's own attempts to swim through the currents.

END OF TEST 3

STOP! DO NOT TURN THE PAGE UNTIL TOLD TO DO SO. DO NOT RETURN TO A PREVIOUS TEST.