Mars

READING TEST

35 Minutes—40 Questions

Reading Lesson 2

DIRECTIONS: There are four passages in this test. Each passage is followed 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 short story "Black Holes" by Elizabeth Tallent, which first appeared in *The New Yorker* (©1985 by Elizabeth Tallent).

Saturday morning, Will Giles blows the blue-black husks of dead flies from the channel in the window sash before gently pressing the new pane of glass into place. His reflection slants across it—a dark-haired man on his knees, looking hopeful. The glass fits, and the panes of the tall sidelight to the left of the front door are complete. He smiles over his shoulder at Fanny, who is sitting on the porch railing swinging her heels, and then he knocks on the door. "In a week, you'll be inside, and maybe you'll hear somebody knock, and you'll feel nice and safe because you know whoever's there is knocking on solid oak. Isn't it a great front door, Fanny?"

Fanny is five, child of a marriage Will thinks of as well forgotten. In fact, he has a recurring dream that he is in a booth trying to find enough change to call Oklahoma City, where Ally has lived since the divorce. She didn't think it very likely that she would keep in touch with him or Fanny. Ally had wanted to make a clean sweep of her previous existence and she seems to have stuck by that resolve. Will hasn't heard from her in a year.

Fanny is rocking on the railing, left leg cradled to her chest, the knee tucked under her chin. He reaches for a screwdriver, and taps her foot with it. "Hey, you look a little precarious."

"I can sit like this hours and not fall."

"Don't be so hard on my heart, Fanny."

She straightens, going as primly alert as if an invisible book had descended to her head, and squeezes first one dirty sneaker, then the other, into the narrow gaps between the spindles that support the railing, daring him to tell her not to do that, either; when he doesn't, she looks satisfied, and locks her feet, toed in, behind a peeling spindle.

"Thank you," he says. "Once this is finished, your house is going to be in good shape." Since she's been coming here with him on Saturdays, he has taken to calling it her house. A truer joke might be that for a long time to come this is going to be the bank's house. His second wife, Carrie Ann, argued that they couldn't keep Christopher's crib at the end of the hallway for long, that a baby and a five-year-old really need a room each. This costly Victorian, with its leaks and loose shingles, with swallows' nests suspended in its sooty chimneys, was her solution. Will is not in love with it, not the way his wife is, but he has begun to feel for it that involuntary affection sparked in him by things badly in need of repair.

Fanny jumps from the railing and slides by him, leaving the door open. With a razor blade he trims a gauzy line of glazing compound into a neat margin, pausing now and then to admire the door, which blazes: old oak with its curls and knots and close grain.

He finds Fanny in an upstairs room that smells of drafty wall-papered emptiness, her chin on the windowsill, chipping paint away with her thumbnail. Peels of paint lie on the sill and the floor. "Hey," he says. "You didn't swallow any of those, did you?"

She shakes her head, chin pivoting on the sill, her nose nearly touching glass. "I don't eat paint," she says, with dignity.

"I think about things like that, *chica*. I'm a father." He sits in a corner, deciding from her silence that she should have his entire attention. Since Christopher was born, he has too often felt he had nothing left over for Fanny—though he swore that would never happen. "So how are you?" he says. "How's school been?"

To his surprise, she pulls a folded slip of notebook paper from her pocket. "My teacher said I had to give you this."

"What is it?"

"I can't read writing yet. Only printing." She drops it to the floor.

He picks it up and begins to crease it into an airplane. Should he open the window and let it fly? "But you didn't like the idea of giving it to me?"

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"I was going to. I was waiting."

He tucks the airplane into a pocket, walks to her on his knees, and waits for her to turn her head, but she doesn't; at arm's length, she is so still he can hear pigeons walking on the wooden shingles of the roof. "Tell me something, Fan," he pleads. "Have I seemed far away lately?"

"No."

"Because I want you to know you can always find me. Have you felt, maybe, that it's been hard to get my attention?"

"You're just you."

"Yes," he says, "but is that good or bad?" He pretends the end of her braid is a paintbrush and traces the corner of her mouth with it. "No answer, huh?" He tickles under her pale jaw until she has to smile. He says, "I can see you want me to fear the worst."

1. The passage indicates that in his relationship with Fanny, Will Giles is:
   - A. watchful regarding Fanny's safety and worried about her feelings.
   - B. confident of Fanny's love and neglectful of her feelings.
   - C. strict regarding Fanny's safety and intolerant of her moods.
   - D. attentive regarding Fanny's behavior at school and impatient with her moods.

2. It can be concluded from information in the passage that Christopher is:
   - F. Fanny's five-year-old brother.
   - G. Will Giles' son from his first marriage.
   - H. Fanny's infant stepbrother.
   - J. Will Giles' oldest child.

3. As it is used in line 26, the word *precarious* most nearly means:
   - A. unsteady.
   - B. determined.
   - C. immature.
   - D. precious.

4. Fanny's behavior when her father asks if she has swallowed any of the paint chips can best be described as:
   - F. confident and a little insulted.
   - G. insolent and ashamed of herself.
   - H. respectful and a little watchful.
   - J. furious and proud of herself.

5. It can most reasonably be inferred that Will Giles refers to the house as Fanny's house primarily in order to:
   - A. convince himself that the house belongs to Fanny rather than to the bank or Carrie Ann and himself.
   - B. show his affection for Fanny by trying to help her feel pride in the new house.
   - C. remind Fanny of her obligation to help with fix-up work around the house.
   - D. make Fanny feel responsible in part for the family's decision to buy a new home.

6. It can most reasonably be inferred that Will Giles' reaction to receiving the note from Fanny's teacher is one of:
   - F. pleasure, since he makes the note into a paper airplane.
   - G. annoyance, since he puts the note into his pocket without reading it.
   - H. sadness, since he knows Fanny is in trouble at school.
   - J. concern, since he tries to find out what Fanny is feeling about the note.

7. Fanny's attitude toward the note from her teacher can best be inferred from the fact that:
   - A. Will Giles delays reading it because he fears the worst.
   - B. she didn't give the note to her father as soon as she brought it home from school.
   - C. when Will Giles asks what the note says, she says she doesn't know because she can't read writing yet.
   - D. she smiles when her father tickles her under the chin with her braid.

8. The point of view from which this passage is told can best be described as that of:
   - F. Will Giles and his daughter Fanny.
   - G. Will Giles, Fanny, and Carrie Ann.
   - H. a narrator who knows Will Giles' thoughts.
   - J. a narrator who shares her own opinions of the characters being described.

9. The passage opens with a description of Will Giles working on a home project that:
   - A. annoys him, since he is not in love with the old house.
   - B. reminds him of the Oklahoma City home of his ex-wife Ally.
   - C. is typical of the work he has been doing lately during weekends.
   - D. is dangerous, which is why he asks Fanny to move out of the way.

10. If the last paragraph of the passage (lines 90–94) were deleted, the passage would lose details that:

    F. are crucial to understanding the contents of the teacher's note.
    G. are the only evidence in the passage of Will Giles' fatherly feelings for his daughter.
    H. prove that Will Giles is upset about receiving the teacher's note.
    J. suggest to the reader that Fanny wants her father's attention.

Passage II

SOCIAL SCIENCE: This passage is adapted from *The Control of Nature* by John McPhee (©1989 by John McPhee).

Cooling the lava was Thorbjorn's idea. He meant to stop the lava. That such a feat had not been tried, let alone accomplished, in the known history of the world did not burden Thorbjorn, who had reason to believe it could be done.

His full name is Thorbjorn Sigurgeirsson. If you look for him in Simaskra, the Iceland telephone directory, you look under "Thorbjorn." You look under "Sigurdur" for Sigurdur Jonsson. You look under "Magnus" for Magnus Magnusson. It doesn't matter that Sigurdur is a harbor manager's deputy, or that Magnus is a postal director, or that Thorbjorn is a physicist trained in Copenhagen by Niels Bohr. Like the Prime Minister, like the President—like all people in Iceland—Thorbjorn is known by his first name. Sigurgeir, of course, was his father.

To Thorbjorn's idea skepticism was the primary response. The skeptics included almost everybody else in Iceland. Red-hot lava—moving with the inexorability of tide—was threatening a town and a harbor on an offshore island. The vent was a nascent volcano. As the entire nation watched on television, a small crew with fire hoses squirted the front of the lava, producing billows of steam. This was in February, 1973. Quickly, the cooling of the lava became a national joke.

There may even have been smiles in the National Emergency Operation Center, in Reykjavik, where the Civil Defense Council was watching Thorbjorn's experiments. The National Emergency Operation Center has grown since then but is still concentrated around a command-post bomb shelter built as Iceland's cerebral cortex in the event of a nuclear war. The Civil Defense Council had been established in 1962, and was scarcely a year old when—sixty-five miles southeast of the capital—the ocean began to boil. Red lava appeared in the Atlantic swells and, layer upon layer, emerged as an island that was soon the second largest of a fleet of islands collectively known as Vestmannaeyjar. Behind thick concrete walls and steel anti-radiation doors, in a space where the air can be pressurized to keep anything noxious from seeping in, [Iceland's Civil Defense Council] directs the war against nature. "War" is the word often used, especially with reference to the campaign begun after the twenty-third of January, 1973, when a fissure suddenly opened in the outskirts of a community of five thousand people and a curtain of lava five hundred feet high and a mile long fountained into the sky above Heimaey, the largest island of Vestmannaeyjar.

In Vestmannaeyjar, the nub of the crisis was simple and economic. Iceland's exports were three quarters fish. Heimaey, in Vestmannaeyjar, was Iceland's single most important fishing center. Not merely was Heimaey's harbor the best harbor along the three hundred miles of Iceland's south coast; it was the only one.

The cooling was at first confined to the lava front. Men stood on cold ground before the flowing rock and watered it like a garden. Its Fahrenheit temperature was around two thousand degrees. The water would reduce the heat locally by a factor of four, creating a wall of chilled lava to dam the flow behind. Soon it became apparent that the wall would have to be a great deal thicker than hoses could ever make it from positions ahead of the flow. The lava should be cooled not so much by the edge as by the acre, and that called not only for more pumps but also for the deployment of matériel and personnel up on top of the advancing flow.

It was astonishing to see what an essentially liquid body of rock would carry on its surface. As lava moves, under the air, it develops a skin of glass that is broken and rebroken by the motion of the liquid below, so that it clinks and tinkles, and crackles like a campfire, which, in a fantastic sense, it resembles. During the eruption, when the pumping crews first tried to get up on the lava, they found that crust as thin as two inches was enough to support a person and also provide insulation from the heat—just a couple of inches of hard rock resting like pond ice upon the molten fathoms. As the crews hauled and heaved at hoses, nozzle tripods, and sections of pipe, they learned that it was best not to stand still. Often, they marched in place. Even so, their boots sometimes burst into flame.

People viewed the struggle through the metaphor of war. They behaved as if they were in combat, and on the streets of Reykjavik and other Icelandic towns veterans encountering one another will still talk about their service in Vestmannaeyjar.

11. The reason that people at first stood in front of the lava and watered the flowing rock was because they wanted to:

    A. reduce the temperature and create a wall to dam the flow behind.
    B. reduce the temperature not so much by the edge as by the acre.
    C. create a crackling skin of glass which pumping crews could cool.
    D. cool the lava and bring some solidified pieces to the Civil Defense Council.

12. According to the passage, Thorbjorn was employed as:
    F. the postal director.
    G. the Prime Minister.
    H. a harbor manager's deputy.
    J. a physicist.

13. It was important to save the village of Heimaey from destruction by lava because it was the:
    A. main tourist attraction in Iceland.
    B. site of the National Emergency Operation Center.
    C. home of Thorbjorn Sigurgeirsson, the president.
    D. main fishing center in Iceland.

14. The author includes the information presented in the second paragraph (lines 6–16) to call attention to which aspect of Icelandic culture?
    F. The highly technological society Iceland has become
    G. The informal way in which people of various class standings are addressed in present-day Iceland
    H. The well-honed organizational skills of the people in Iceland
    J. The lack of strong family ties felt by the present generation in Iceland

15. It can reasonably be inferred that the plan to cool the lava was a national joke because:
    A. Thorbjorn had no qualifications for or experience in lava control.
    B. the first small crew with fire hoses appeared to be no match for the lava.
    C. the entire nation watched the nascent volcano on television.
    D. Thorbjorn had a reputation for thinking up impractical ideas like this one.

16. Along with everybody else in Iceland, Thorbjorn was:
    F. a worker in the struggle against the lava.
    G. critical of the Civil Defense Council.
    H. skeptical about stopping the lava flow.
    J. listed in the phone book by his first name.

17. From the tone of the essay, one can infer that the author finds the story of the people's struggle against the lava flow:
    A. at once bizarre and depressing.
    B. both horrifying and familiar.
    C. both amusing and oddly admirable.
    D. ordinary yet strangely compelling.

18. The Civil Defense Council and most of the people in Vestmannaeyjar behaved as if their struggle to control the lava was a:
    F. rebirth.
    G. joke.
    H. battle.
    J. pleasure.

19. Heavy equipment, pipe, and hoses were eventually moved on top of the advancing lava flow to:
    A. create a mountain of hot earth to dam the flow.
    B. reduce the heat of the lava by two thousand degrees.
    C. increase the area of lava cooled by the water.
    D. film the event for the television news.

20. What is the effect of the author's comparison of the watering of the lava to the watering of a garden (lines 58–59)? The comparison:
    F. humorously heightens the oddity of watering lava by juxtaposing it to an everyday activity.
    G. creates a hazy yet romantic image, sharpening readers' wishes for the Icelanders' success.
    H. adds suspense during an otherwise slow and technical description of the lava formations.
    J. conveys the impression that this was a casual event, as normal to the Icelanders as watering a garden.

Passage III

HUMANITIES: This passage is adapted from the section on oral tradition in *Talking Indian* by Anna Lee Watters, published by Firebrand Books (©1992 by Anna Lee Watters). In this section, the author discusses her experience of language as a member of both the Pawnee and Otoe tribes.

My first memories are not so much of *things* as they are of *words* that gave shape and substance to my being and form to the world around me. Born into two tribal cultures which have existed for millennia without written languages, the spoken word held me in the mystical and intimate way it has touched others who come from similar societies whose literature is oral.

In such cultures, the spoken word is revered, and to it are attributed certain qualities. One quality is akin to magic or enchantment because the mystery of language and speech, and the processes of their development, as well as their origin, can never be fully explained. For the same reason, the spoken word is believed to be power which can create or destroy.

Members of societies which have no written language spend their lifetimes reaffirming that the spoken word lives of its own indescribable power and energy, floating apart and separate from individual human voices who utter it. Yet, paradoxically, we are also shown that it is through the power of speech, and the larger unified voice of oral tradition, that we exist as we do.

Listening is the first sense to develop in the womb. It is not surprising, then, that I was conscious of sounds earlier than anything else as an infant. Mainly, these were the sounds of the universe, the outdoors. They included whishing bird wings rising up into the sky, rustling trees, the cry of the mourning dove, and the rippling wind. They were the first nonhuman sounds I heard because my family spent most of the time outdoors. This awareness was followed by other sounds of life embracing me with deep sighs and measured breaths. Those human sounds then became syllables, or vocables, and voice patterns with intonations and inflections. Eventually and inexplicably they turned into words such as Waconda, meaning Creator, or the Great Mystery of Life, and *waduge,* meaning to eat, and Mayah, the Earth.

There were many individual voices, male and female, old and young, scattered about me, and these voices expressed themselves in two languages, Otoe and English. Some of the people were literate in English. Otoe was unwritten for the most part. But more often than not, as if by some magnetic pull of oral tradition, the individual tribal voices unconsciously blended together, like braided strands of thread, into *one* voice, story, song, or prayer. That thread stretched, unbroken, to a pre-time and origin that still lived in the mystery and power of the Otoe language, their *spoken* word, even translated into English as it had been for well over a century before I was born. The echo of that tribal voice, in Otoe or English, never disappears or fades from my ear, not even in the longest silences of the people, or in my absences from them.

In the Pawnee culture, the experience with that language and their spoken word, and their numerous voices flowing into one, was identical to the Otoe experience, though Pawnee culture and language are distinctly different because the two tribes are unrelated. The Pawnees had also adopted English to a certain extent by the time I was born. But before that, French and Spaniards had mingled among them and intermarried with them, thereby introducing those languages. French and Spanish intermarriage had also occurred among the Otoe, but even with these influences, as well as those of other tribal cultures through adoption and intermarriage, the Pawnees and the Otoes retained their own unique voices, their own memories, consciousness, and spirits. In their approaches to the world, reality, and existence, and through the spoken word, they were alike. They both had extended a pattern of life over countless generations, through the centuries, and credited their survival and continuity to the power of their oral traditions. These are haunting and powerful voices that still recall prehistoric tribal visions and experiences that are the core of their identities today.

The Otoe voice seemed to originate and drift from the north, much further away from Oklahoma where the Otoes then resided. Nevertheless, I was able to hear it when I was alone in the cotton fields north of my grandparents' house. It whispered of a time before Indian Territory, before the Oklahoma hills where I was born, and I'm certain, too, that this was the same voice of a relative who retold old stories with a new twist. He often sat at our table speaking to us in whispers, and occasionally in shouts from across the fields, of the life, history, and fate that we all shared as one tribal people.

21. The narrator says the first sounds she was conscious of were sounds of:

- **A.** deep sighs, measured breaths, and human intonations.
- **B.** whishing bird wings, rustling trees, and a dove's cry.
- **C.** stories, songs, and prayers in Pawnee and English.
- **D.** individual voices of family members, male and female.

22. It may reasonably be inferred that the narrator's primary aim in this passage was to tell readers about:

- **F.** the importance of respect for nature in various American Indian cultures.
- **G.** her memories of growing up as an Otoe/Pawnee child near the rivers of Oklahoma.
- **H.** the importance of the oral tradition to the people of the Otoe and Pawnee tribes.
- **J.** the importance of understanding the psychology of one's ancestors when one is a member of a tribal culture.

23. The main point the narrator is making about the oral tradition of the Pawnee and the Otoe societies in lines 69–76 is that:

A. the pattern of life of both tribes has become bound up in oral traditions which, though powerful, are no longer the core of tribal identities.
B. both tribes have survived for years and they have given little credit to the power of the traditions that hold them.
C. the cultures of both tribes have existed for centuries, and both tribes credit their long survival to their oral traditions.
D. though the two tribes differ in their views of reality, both tribes credit the French for helping them keep their oral traditions alive.

24. It can reasonably be inferred that the narrator's description of the whispering Otoe voice in lines 77–87 is meant to suggest to readers the:

F. enduring power and influence the stories of relatives and Otoe friends had upon her.
G. fact that her friends told her stories about their history and fate.
H. loneliness she experienced as a child growing up in her grandparents' house.
J. difficulty she had imagining a time before Indian Territory, when the hills were new.

25. In comparing Otoe and Pawnee culture, the narrator finds that the two are identical in that:

A. members of each tribe say their first memories are of words rather than things.
B. for both, the spoken word encompasses numerous voices flowing into one tribal voice.
C. each tribe originates from the northern hills of Oklahoma.
D. both tribal cultures give evidence of greater influence from the Spanish than from the French.

26. Which of the following questions can be answered according to information given in the passage?

F. Which is the first sense humans develop?
G. Where do the Pawnee people reside?
H. Why did Spaniards intermarry with the Otoe?
J. What is an Otoe belief about the world's creation?

27. The narrator says she attributes magic to the spoken word because the:

A. spoken word floats apart from the speaker who tries to capture it in memory.
B. spoken word is something that has power neither to create nor to destroy.
C. mystery and origin of language and speech can never be fully explained.
D. origin, qualities, processes, and development of language and speech are often too easily explained.

28. The narrator says she was able to hear the Otoe voice when she was:

F. north of the Oklahoma hills where she was born.
G. across the table from her grandfather retelling stories.
H. alone in the cotton fields near her grandparents' house.
J. listening to the shouts and whispers of relatives.

29. When the narrator speaks of "the larger unified voice of oral tradition" (lines 20–21), it can reasonably be inferred that she is referring to the:

A. voice of the French and Spaniards that influenced and unified the Pawnee and Otoe.
B. oral literature of a people: the stories, songs, teachings, and prayers that are passed on and become the "voice" of the people.
C. large voice that floats above the land, the voice the narrator's mother heard in the wind, the turtle's cry, the rustling trees.
D. oral tradition of the ancestors as a whole that brings measured sighs to those in societies without traditional literature.

30. In lines 43–51, the narrator uses the image of unbroken strands of thread braided together into one to represent the:

F. stories, songs, or poems that blend together, then disappear in the long silences of the people.
G. mystery and power of the Pawnee language that stretched unbroken into a time of pre-origin.
H. voices scattered about the child as she listened to the echo of her mother's heart from the womb.
J. individual tribal voices of the oral tradition, which blend into one powerful voice even when Otoe is translated into English.

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Passage IV

NATURAL SCIENCE: This excerpt is taken from Mike May's article, "Aerial Defense Tactics of Flying Insects," which appeared in *American Scientist* magazine (©1991 by Sigma Xi, The Scientific Research Society).

As a graduate student I learned there is a considerable history to the study of the aerial encounters between bat and insect. It proves to be a story with a number of surprising turns, and it begins almost 200 years ago with the discovery that bats use their ears, and not their eyes, to navigate.

Lazaro Spallanzani, an 18th-century pioneer of experimental biology, showed that blinded bats are not only able to avoid obstacles in their flight path—such as fine silk threads—but are also able to snag insects in midflight. After hearing of Spallanzani's research, Charles Jurine, a surgeon and entomologist, demonstrated that when the bats' ears are plugged, the animals collide with even relatively large objects in their path, and they are incapable of catching insects.

For over a century the observations of Spallanzani and Jurine were not widely accepted, primarily because no one could imagine how it was that a bat could hear the precise location of such small, essentially silent objects. No advance was made in understanding "Spallanzani's bat problem" until 1920, when the English physiologist H. Hartridge suggested that bats might somehow use sounds of very high frequency to detect the objects. Perhaps the frequencies might even extend beyond the upper limit of human hearing—about 20 kilohertz—to the part of the spectrum called ultrasound.

The mystery of bat navigation was ultimately solved by a Harvard undergraduate, Donald Griffin, in collaboration with the Harvard physicist G. W. Pierce—who invented a device that could detect ultrasound—and the Harvard physiologist Robert Galambos. In 1938 Pierce and Griffin pointed a "sonic detector" at bats flying in a room and found that the animals were, in fact, emitting signals at ultrasonic frequencies. Griffin and Galambos later showed that bats emit ultrasonic cries from their mouths and use their ears to detect the echoes of the sounds reflected from objects in their flight paths. Griffin called this process of navigation *echolocation*.

Echolocation turns out to be an extremely precise and effective method by which bats navigate and identify objects in the dark. In the early 1980s Hans-Ulrich Schnitzler and his colleagues at the Institute for Biology in Tübingen, and Nobuo Suga of Washington University, found that bats are able to analyze the ultrasonic echoes reflected from the bodies and wings of flying insects in such a way as to determine not only the location but also the speed and, perhaps, the type of insect that produces the echoes. All the evidence suggests that the echolocating bat is a very sophisticated hunter; not only is it an adept flyer, but it is equipped with a sensitive auditory system designed to locate and identify potential targets.

However, the bat's ability to find and capture a flying insect is just one side of the story. Some flying insects are able to detect the ultrasonic cries of a bat and take evasive action. Flying insects pursued by a bat do not follow simple ballistic trajectories; they are not such easy targets. To the contrary, the encounter between a bat and an insect is one that might rival the tactics of modern air-to-air combat, involving an efficient early-warning system, some clever aerodynamic engineering and the simple economics of making do with what is available.

Almost 70 years before Griffin and Galambos demonstrated that bats can locate objects with ultrasound, F. Buchanan White of Perth, Scotland, proposed that moths can detect bats through the sense of hearing. Although White had no evidence for this conjecture, his idea was ultimately confirmed by behavioral studies in the 1950s, and especially by the work of Kenneth Roeder of Tufts University in the early 1960s. Roeder made hundreds of long-exposure photographs of free-flying moths and recorded their aerial maneuvers in response to a stationary source of artificial ultrasound. He found that if the moths were more than 10 feet from the source of the ultrasound, they simply turned away. But if they were closer to the sound, the moths performed a variety of acrobatic maneuvers, including rapid turns, power dives, looping dives and spirals. For a more natural touch, Roeder photographed wild bats attacking the flying moths; clearly visible in the photographs is the track of the bat zipping across the scene and the evasive path of the moth as it escapes the attack—sometimes.

31. Kenneth Roeder's research showed that the reaction of a moth to its detection of a bat's ultrasounds depends upon:

- **A.** the length of time that the moth is exposed to the bat.
- **B.** the distance between the moth and the bat.
- **C.** whether the bat is actually attacking the moth.
- **D.** whether the bat is in flight or stationary.

32. According to the passage, the English physiologist H. Hartridge broke new ground in the study of bats by suggesting that they might:

- **F.** use a process of navigation called echolocation.
- **G.** use their ears, and not their eyes, to navigate.
- **H.** be able to emit ultrasonic signals from their mouths.
- **J.** use sounds beyond the range of human hearing to navigate.

33. The demonstration that Charles Jurine performed with bats (lines 11–15) was done in order to:

A. disprove Spallanzani's theories about bats.
B. prove to Spallanzani that bats are not such capable flyers.
C. test a theory counter to what Spallanzani had suggested.
D. further Spallanzani's research by testing a related theory.

34. Flying insects are NOT always easy prey for bats because some insects can:

I. hear the ultrasonic cries of bats.
II. fly in ballistic trajectories.
III. perform aerial maneuvers to evade bats.
IV. make do with their eyes, whereas bats cannot.

F. I only
G. I and III only
H. II and IV only
J. III and IV only

35. It can most reasonably be inferred from the passage that the primary reason Kenneth Roeder used long-exposure photography in his work was to:

A. produce handsome photographic images of the moths.
B. record the bats' method of evading moths.
C. record the flight patterns of the moths.
D. photograph the feeding habits of wild bats.

36. According to the passage, the invention of the sonic detector was important to research into bat navigation because it:

F. showed that the bats were emitting ultrasounds.
G. demonstrated how the bats analyzed the ultrasounds.
H. picked up the ultrasounds made by flying insects.
J. revealed blinded bats avoiding obstacles in their flight paths.

37. As it is used in line 4, the word *turns* most specifically refers to:

A. complete revolutions.
B. assigned stints of activity.
C. shifts or twists.
D. innate capabilities.

38. Which of the following best describes the "efficient early-warning system" mentioned in line 63?

F. Some flying insects can detect the ultrasounds used by bats.
G. Some flying insects can evade bats with acrobatic aerial maneuvers.
H. Some flying insects can navigate in darkness through the use of echolocation.
J. Bats can locate and identify potential targets by using ultrasonic echoes.

39. Which of the following events in the history of research about bats occurred first?

A. Griffin and Galambos determine that bats navigate with ultrasound.
B. White proposes that moths sense the presence of bats through hearing.
C. Schnitzler, Suga, and others discover bats can analyze ultrasonic echoes.
D. Roeder records the reactions of moths to artificial ultrasound.

40. As it is presented in the passage, F. Buchanan White's statement that moths can hear bats is:

F. a fact confirmed by his behavioral studies in the 1950s.
G. a fact confirmed by his long-exposure photographs of free-flying moths.
H. an opinion based on his invention of ultrasound machinery.
J. an opinion verified many years later by various studies and research.

END OF TEST 3

STOP! DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

DO NOT RETURN TO A PREVIOUS TEST.