Reading Test

65 MINUTES, 52 QUESTIONS

Turn to Section 1 of your answer sheet to answer the questions in this section.

DIRECTIONS

Each passage or pair of passages below is followed by a number of questions. After reading each passage or pair, choose the best answer to each question based on what is stated or implied in the passage or passages and in any accompanying graphics (such as a table or graph).

Questions 1-10 are based on the following passage.

This passage is from James Baldwin, *Another Country*. ©1990 by Gloria Baldwin Karefa-Smart. Originally published in 1962. Eric, an actor, and Vivaldo, a writer, are watching Vivaldo's girlfriend, Ida, sing with a band that her brother, the Kid, once played with.

She was not announced; there was merely a brief huddle with the piano-player; and then she stepped up to the mike. The piano-player began the first few bars, but the crowd did not take the hint.

"Let's try it again," said Ida, in a loud, clear voice.

At this, heads turned to look at her; she looked calmly down on them. The only sign of her agitation was in her hands, which were tightly, restlessly clasped before her—she was wringing her hands, but she was not crying.

Somebody said, in a loud whisper, "Dig, man, that's the Kid's kid sister."

There were beads of sweat on her forehead and on her nose, and one leg moved out, trembling, moved back. The piano-player began again, she grabbed the milk like a drowning woman, and abruptly closed her eyes:

You
Made me leave my happy home.
You too my love and now you've gone,
Since I fell for you.

She was not a singer yet. And if she were to be judged solely on the basis of her voice, low, rough-textured, of no very great range, she never would be. Yet, she had something which made Eric look up and caused the room to fill silent; and Vivaldo stared at Ida as though he had never seen her before. What she lacked in vocal power and, at the moment, in skill, she compensated for by a quality so mysteriously and implacably egocentric that no one has ever been able to name it. This quality involves a sense of the self so profound and so powerful that it does not so much leap barriers as reduce them to atoms—while still leaving them standing, mightily, where they were; and this awful sense is private, unknowable, not to be articulated, having, literally, to do with something else; it transforms and lays waste and gives life, and kills.

She finished her first number and the applause was stunned and sporadic. She looked over at Vivaldo with a small, childish shrug. And this gesture somehow revealed to Eric how desperately one could love her, how desperately Vivaldo was in love with her. The drummer went into a down-on-the-levee-type song, which turned out to be a song Eric had never heard before:

Betty told Dupree
She wanted a diamond ring.
And Dupree said, Betty,
I'll get you most any old thing.

"My God," muttered Vivaldo, "she's been working."

His tone unconsciously implied that he had not been, and held an unconscious resentment. And this threw Eric in on himself. Neither had he been working—for a long time; he had merely been keeping his hand in. He looked at Vivaldo's white, passionate face and wondered if Vivaldo were now thinking that he had not been working because of

Ida: who had not, however, allowed *him* to distract *her*. There she was, up on the stand, and unless all the signs were false, and no matter how hard or long the road might be, she was on her way. She had started.

She and the musicians were beginning to enjoy each other and to egg each other on as they bounced through a ballad of cupidity, treachery, and death; and Ida had created in the room a new atmosphere and a new excitement. Even the heat seemed less intolerable. The musicians played for her as though she were an old friend come home and their pride in her restored their pride in themselves.

The number ended and Ida stepped off the stand, wet and triumphant, the applause crashing about her ears like foam. She came to the table, looking at Vivaldo with a smile and a small, questioning frown, and, standing, took a sip of her drink. They called her back. The drummer reached down and lifted her, bodily, onto the stand, and the applause continued.

1

The passage most strongly suggests that Ida's performance has which effect on Eric and Vivaldo?

A) The song lyrics reach them deeply.

B) Her voice bothers their sense of aesthetics.

C) They both begin to perceive her in a new way.

D) They both realize they are in love with her.

2

Lines 31-38 ("This . . . kills") primarily serve to

A) allude to obstacles that Ida had overcome in pursuing a singing career.

B) suggest that Ida has some unpleasant personal qualities.

C) illustrate the remarkable power of Ida's stage presence.

D) describe how Ida's singing affects some listeners negatively.

3

According to the narrator, Ida's singing voice sounds

A) surprisingly loud and high.

B) flawed and untrained.

C) beautiful but limited in range.

D) incapable of reaching low notes.

4

It can most reasonably be inferred that Eric and Vivaldo, when compared to Ida,

A) are less able to captivate a group of people.

B) have significantly less musical knowledge.

C) more strongly prefer the comfort of friendships over the difficulty of work.

D) have expended less effort in pursuing their career goals.

5

Which choice provides the best evidence for the answer to the previous question?

A) Lines 25-27 ("Yet, she . . . before")

B) Lines 41-44 ("And this . . . with her")

C) Lines 44-46 ("The drummer . . . before")

D) Lines 55-57 ("Neither . . . hand in")

6

In lines 60 and 61, the author italicizes the words "him" and "her" primarily to

A) reveal the envy Vivaldo harbors toward Ida for putting more effort toward her singing career than their relationship.

B) suggest a contrast between the effect Ida has on Vivaldo's work and the effect Vivaldo has on Ida's work.

C) highlight the positive effect Ida's relationship with Vivaldo has had on her self-confidence.

D) underscore the mutual distractions that both Ida and Vivaldo must face as creative artists.

7

As used in line 62, "signs" most nearly means

A) indications.

B) symbols.

C) directions.

D) warnings.

8

Based on the passage which statement best describes the relationship between Ida and the band?

A) Ida sings with the band to help them achieve a musical comeback.

B) Ida and the band develop a musical rapport that is mutually exhilarating.

C) The band members promote Ida's career out of regard for her brother.

D) The band members restrain their resentment over Ida's quick success.

9

Which choice provides the best evidence for the a to the previous questions?

A) Lines 3-4 ("The piano-player . . . hint")

B) Lines 15-17 ("The piano-player . . . eyes")

C) Lines 64-68 ("She and . . . excitement")

D) Lines 76-78 ("They . . . continued")

10

As used in line 71, "restored" most nearly means

A) fixed.

B) updated.

C) retrieved.

D) revived.

Questions 11-21 are based on the following passage and supplementary material.

This passage is adapted from Ian Tattersall, *Masters of the Planet: The Search for Our Human Origins*. ©2012 by Ian Tattersall.

Some of the most notable technological advances in hominid history, including the domestication of fire, the invention of compound tools, and the building of shelters, predated language. Such achievements are impressive indeed. But language facilitated the imposition of symbolic information processing upon older cognitive processes. And this added an entirely new dimension to the way in which hominids saw the world, and eventually reimagined it.

That this momentous event took place in Africa—the continent in which we find the first fossil evidence of creatures who looked just like us, and (somewhat later) the earliest archaeological suggestions of symbolic activities—is corroborated by a recent study of the sounds used in spoken languages around the world. The study of comparative linguistics makes it clear that languages have evolved much as organisms have done, with descendant versions branching away from the ancestral forms while still retaining for some time the imprint of their common origins. Many scientists have accordingly used the differentiation of languages as a guide to the spread of mankind across the globe. And in doing this they have traditionally concentrated on the words that make up those languages. But this has proved a tricky endeavor, for individual words change quite rapidly over time: so rapidly that beyond a time depth of about five thousand years, or ten at the very most, it turns out to he fairly hopeless to look for substantial traces of relationship. As a result, while language has indeed proven useful in tracing the movement of peoples around the Earth over the last few thousand years, linguists have been somewhat stymied when it comes to its very early evolution.

Cognitive psychologist Quentin Atkinson has recently suggested an alternative. According to Atkinson, in seeking the origins of language we are better off looking not at words as a whole, but at the individual sound components—the phonemes—of which they are comprised. This makes sense, because the phonemes are much more bound by biology than are the ideas that their combinations represent. And when Atkinson looked at the distribution of phonemes in languages around the world, he found a remarkable pattern. The farther away from Africa you go, the fewer phonemes are typically used in producing words. Some of the very ancient "click" languages of Africa, spoken by people with very deep genetic roots, have over a hundred phonemes. English has about 45; and in Hawaii, one of the last places on Earth to be colonized by people, there are only 13.[1] Atkinson attributes this pattern to what is known as "serial founder effect": a phenomenon, well known to population geneticists, that is due to the drop in effective population size each time a descendant group buds off and spreads away from an ancestral one. With each successive budding, genetic—and apparently also phonemic—diversity diminishes.

The signal of this effect in the five hundred or so languages analyzed by Atkinson is weaker than the one found in the genes, but this difference is plausibly due to the rapidity with which languages evolve. The key thing, though, is that the genetic and phonemic patterns are essentially the same, and that both point to an origin in Africa. Atkinson's analysis suggests that the convergence point may be in southwestern Africa, which is also in line with one recent genetic study. And his results imply not only that modern *Homo sapiens* originated in a single place, but also that the same thing was true for language (or at least, for the form of language that survives today). In which case, there is a strong argument for a fundamental synergy between biology and language in the rapid takeover of the world by articulate modern humans.

[1]The author refers to the Polynesian language Hawaiian, the main language spoken by the people of Hawaii prior to their contact with Europeans in the eighteenth century.

Phonemic Diversity and Distance from Postulated Language Origin Site for 10 Language Families

Language family	Examples of languages in family	Mean phoneme diversity (0 = global mean; increasing values = increasing diversity)	Distance from postulated language origin site in southwestern Africa to geographic center of language family (kilometers)
Afro-Asiatic	Arabic, Somali	0.316	4,164
Altaic	Turkish, Uzbek	−0.040	10,703
Australian	Alawa, Tiwi	−0.738	17,922
Indo-European	English, Hindi	0.069	9,025
Khoisan	Deti, Sandawe	0.652	1,161
Mayan	Huastec, Jakaltek	−0.198	22,267
Niger-Congo	Igbo, Swahili	0.665	3,050
Sino-Tibetan	Burmese, Mandarin	0.543	12,153
Trans-New Guinea	Ekari, Kewa	−0.152	18,038
Yanomam	Shiriana, Sanuma	−0.623	25,619

Adapted from Quentin D. Atkinson, "Phonemic Diversity Supports a Serial Founder Effect Model of Language Expansion from Africa." ©2011 by American Association for the Advancement of Science.

11

It can reasonably be inferred from the passage that the author views the advent of language as

A) inevitable, because early hominids possessed the biological capacity for speech.

B) pivotal, because it changed the way that hominids made sense of their existence.

C) overvalued, because important advancements in technology had already taken place.

D) fortunate, because it accelerated hominids' expansion across the African continent.

12

Which choice best supports the idea that the pace at which languages evolve has posed a challenge to research into the migration of modern humans?

A) Lines 22-25 ("Many . . . globe")

B) Lines 25-27 ("And in . . . languages")

C) Lines 27-32 ("But this . . . relationship")

D) Lines 38-42 ("According . . . comprised")

13

As used in line 43, "bound" most nearly means

A) restricted.

B) resolved.

C) secured.

D) bordered.

1

14

According to the passage, which statement best describes the relationship between phonemes and population shifts?

A) The number of phonemes used by a population determines the diversity of descendant groups.

B) When descendant groups of a population merge with one another, the total number of their phonemes increases.

C) Phonemic diversity in a population changes only with early branching of descendant groups.

D) As a population's size decreases in descendant groups, the number of phonemes also decreases.

15

As used in line 61, "diminishes" most nearly means

A) relaxes.

B) criticizes.

C) removes.

D) declines.

16

Lines 49-51 ("Some . . . phonemes") mainly serve to

A) provide an example in support of a claim made by the author.

B) note an exception to a pattern described in the passage.

C) define a term that may be unfamiliar to some readers.

D) describe an occurrence that raises additional research questions.

17

Based on the passage, Atkinson's research suggests which relationship between genetic and phonemic diversity?

A) Genetic diversity provides stronger evidence of the effects of a group's divergence from ancestral populations than phonemic diversity does.

B) The genetic diversity of a group tends to increase at a steadier rate than does the phonemic diversity of the language spoken by that group.

C) When genetic and phonemic diversity in a group reach a certain threshold, the group is likely to diverge into multiple descendant groups.

D) Genetic diversity points to a single origin event for language, while phonemic diversity suggests the possibility of more than one such event.

18

Which choice provides the best evidence for the answer to the previous question?

A) Lines 54-59 ("Atkinson . . . one")

B) Lines 59-61 ("With . . . diminishes")

C) Lines 62-66 ("The signal . . . evolve")

D) Lines 71-75 ("And his . . . today")

19

According to the table, what is the distance between the geographic center of the Trans-New Guinea language family and the postulated language origin site in southwestern Africa?

A) 12,153 kilometers

B) 17,922 kilometers

C) 18,038 kilometers

D) 25,619 kilometers

20

The table indicates that the language family with the greatest distance from the postulated language origin site to its geographic center includes which two languages?

A) Turkish and Uzbek

B) Huastec and Jakaltek

C) Ekari and Kewa

D) Shiriana and Sanuma

21

Based on the passage and the table, the Indo-European language family arose through a smaller number of successive buddings from ancestral populations than did which other language family?

A) Khoisan

B) Niger-Congo

C) Mayan

D) Afro-Asiatic

Questions 22-32 are based on the following passage and supplementary material.

This passage is adapted from Stephen M. Roth, "Why Does Lactic Acid Build Up in Muscles? And Why Does It Cause Soreness?" ©2006 by Scientific American, a division of NatureAmerica, Inc.

As our bodies perform strenuous exercise, we begin to breathe faster as we attempt to shuttle more oxygen to our working muscles. The body prefers to generate most of its energy using aerobic methods, meaning with oxygen. Some circumstances, however, require energy production faster than our bodies can adequately deliver oxygen. In those cases, the working muscles generate energy anaerobically. This energy comes from glucose through a process called glycolysis, in which glucose is broken down or metabolized into a substance called pyruvate through a series of steps. When the body has plenty of oxygen, pyruvate is shuttled to an aerobic pathway to be further broken down for more energy. But when oxygen is limited, the body temporarily converts pyruvate into a substance called lactate, which allows glucose breakdown—and thus energy production—to continue. The working muscle cells can continue this type of anaerobic energy production at high rates for one to three minutes, during which time lactate can accumulate to high levels.

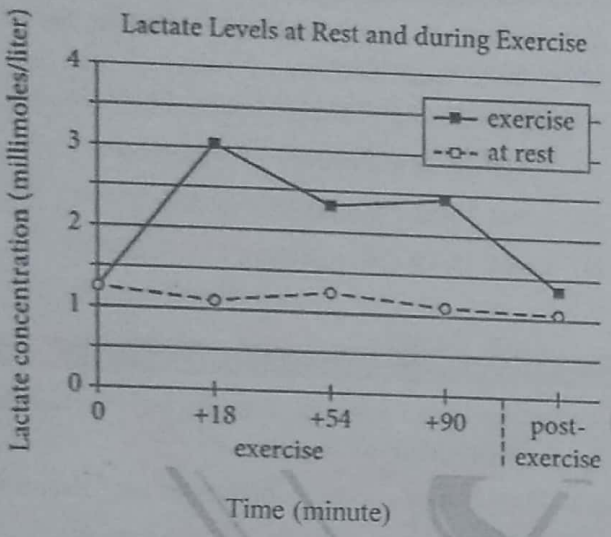
A side effect of high lactate levels is an increase in the acidity of the muscle cells, along with disruptions of other metabolites. The same metabolic pathways that permit the breakdown of glucose to energy perform poorly in this acidic environment. On the surface, it seems counterproductive that a working muscle would produce something that would slow its capacity for more work. In reality, this is a natural defense mechanism for the body; it prevents permanent damage during extreme exertion by slowing the key systems needed to maintain muscle contraction.

Contrary to popular opinion, lactate or, as it is often called, lactic acid buildup is not responsible for the muscle soreness felt in the days following strenuous exercise. Rather, the production of lactate and other metabolites during extreme exertion results in the burning sensation often felt in active muscles, though which exact metabolites are involved remains unclear. This often painful sensation also gets us to stop overworking the body, thus forcing a recovery period in which the body clears the lactate and other metabolites.

Researchers who have examined lactate levels right after exercise found little correlation with the level of muscle soreness felt a few days later. This delayed-onset muscle soreness, or DOMS as it is called by exercise physiologists, is characterized by sometimes severe muscle tenderness as well as loss of strength and range of motion, usually reaching a peak 24 to 72 hours after the extreme exercise event.

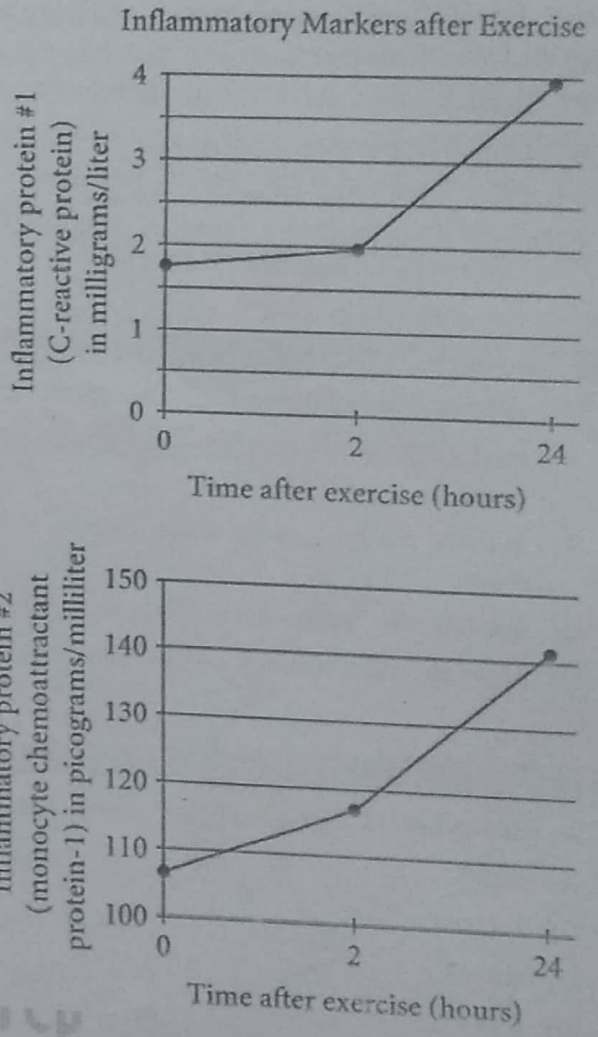
Though the precise cause of DOMS is still unknown, most research points to actual muscle cell damage and an elevated release of various metabolites into the tissue surrounding the muscle cells. These responses to extreme exercise result in an inflammatory-repair response, leading to swelling and soreness that peaks a day or two after the event and resolves a few days later, depending on the severity of the damage. In fact, the type of muscle contraction appears to be a key factor in the development of DOMS. When a muscle lengthens against a load—imagine your flexed arms attempting to catch a thousand pound weight—the muscle contraction is said to be eccentric. In other words, the muscle is actively contracting, attempting to shorten its length, but it is failing. These eccentric contractions have been shown to result in more muscle cell damage than is seen with typical concentric contractions, in which a muscle successfully shortens during contraction against a load.

Figure 1



Adapted from Penny E. Shockett et al., "Plasma Cell-Free Mitochondrial DNA Declines in Response to Prolonged Moderate Aerobic Exercise." ©2016 by Penny E. Shockett et al.

Figure 2



Adapted from Franchek Drobnic et al., "Reduction of Delayed Onset Muscle Soreness by a Novel Curcumin Delivery System (Meriva): A Randomised. Placebo-Controlled Trial." ©2014 by Franchek Drobnic et al.

22

The passage most strongly suggests that the body can generate energy anaerobically only

A) during rapid breathing.

B) when it has sufficient oxygen.

C) while it breaks down lactate.

D) for a limited amount of time.

23

Which choice provides the best evidence for the answer to the previous question?

A) Lines 1-3 ("As our . . . muscles")

B) Lines 12-14 ("When . . . energy")

C) Lines 14-18 ("But when . . . continue")

D) Lines 18-22 ("The working . . . levels")

24

The main purpose of the passage is to

A) examine what causes tenderness in muscles after exercise.

B) describe the process by which glucose is broken down.

C) question why lactate accumulates in muscle cells.

D) argue for more research on metabolic pathways.

25

As used in line 33, "maintain" most nearly means

A) justify.

B) contend.

C) sustain.

D) repair.

26

The passage most strongly suggests that the effects of high levels of lactate in the body.

A) prevent muscle cells from becoming too acidic.

B) are commonly misunderstood.

C) bring on muscle soreness a few days later.

D) are generally harmful to the body.

27

Which choice provides the best evidence for the answer to the previous question?

A) Lines 23-25 ("A side . . . metabolites")

B) Lines 35-38 ("Contrary . . . exercise")

C) Lines 38-42 ("Rather . . . unclear")

D) Lines 46-48 ("Researchers . . . later)"

28

According to the passage, how do high lactate levels function as a defense mechanism?

A) They prevent people from overworking their bodies.

B) They ensure oxygen reaches the muscles.

C) They protect metabolites from disruption.

D) They improve the functioning of metabolic path -ways.

29

As used in line 47, "right" most nearly means

A) satisfactorily.

B) appropriately.

C) immediately.

D) exceedingly.

30

Which of the following statements about the inflammatory markers represented in figure 2 is true?

A) The concentration of the markers increased during the first 24 hours after exercise.

B) The concentration of the markers decreased during the first 24 hours after exercise.

C) The concentration of the markers increased during the first 2 hours after exercise but then decreased.

D) The concentration of the markers decreased during the first 2 hours after exercise but then increased.

31

It can most reasonably be inferred from the passage that high levels of the proteins represented in figure 2 are most likely correlated with high levels of

A) anaerobic energy production.

B) muscle cell damage.

C) lactate buildup.

D) glucose breakdown.

32

According to the passage, which of the following statements best describes the relationship between the information depicted in the two figures and DOMS?

A) Figure 1 depicts information about a factor that indicates DOMS, and figure 2 does not.

B) Figure 2 depicts information about factors that indicate DOMS, and figure 1 does not.

C) Figures 1 and 2 both depict information about factors that indicate DOMS.

D) Neither figure 1 nor figure 2 depicts information about factors that indicate DOMS.