

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.

Questions 1–10 are based on the following passage and supplementary material.

This passage is adapted from Kevin Drum, “America’s Real Criminal Element: Lead” ©2013 Mother Jones.

Experts often suggest that crime resembles an epidemic. But what kind? Economics professor Karl Smith has a good rule of thumb for categorizing epidemics: If it spreads along lines of communication, he says, the cause is information. Think Bieber Fever.¹ If it travels along major transportation routes, the cause is microbial. Think influenza. If it spreads out like a fan, the cause is an insect. Think malaria. But if it’s everywhere, all at once—as both the rise of crime in the ’60s and ’70s and the fall of crime in the ’90s seemed to be—the cause is a molecule.

A molecule? That sounds crazy. What molecule could be responsible for a steep and sudden decline in violent crime?

Well, here’s one possibility: $\text{Pb}(\text{CH}_2\text{CH}_3)_4$. In 1994, Rick Nevin was a consultant working for the US Department of Housing and Urban Development on the costs and benefits of removing lead paint from old houses. A growing body of research had linked lead exposure in small children with a whole raft of complications later in life, including lower IQ, hyperactivity, behavioral problems, and learning disabilities. A recent study had also suggested a link between childhood lead exposure and juvenile

delinquency later on. Maybe reducing lead exposure had an effect on violent crime too?

That tip took Nevin in a different direction. The biggest source of lead in the postwar era, it turns out, wasn’t paint, but leaded gasoline. If you chart the rise and fall of atmospheric lead caused by the rise and fall of leaded gasoline consumption, you get an upside-down U. Lead emissions from tailpipes rose steadily from the early ’40s through the early ’70s, nearly quadrupling over that period. Then, as unleaded gasoline began to replace leaded gasoline, emissions plummeted.

Intriguingly, violent crime rates followed the same upside-down U pattern (see the graph). The only thing different was the time period. Crime rates rose dramatically in the ’60s through the ’80s, and then began dropping steadily starting in the early ’90s. The two curves looked eerily identical, but were offset by about 20 years.

So Nevin dug up detailed data on lead emissions and crime rates to see if the similarity of the curves was as good as it seemed. It turned out to be even better. In a 2000 paper he concluded that if you add a lag time of 23 years, lead emissions from automobiles explain 90 percent of the variation in violent crime in America. Toddlers who ingested high levels of lead in the ’40s and ’50s really were more likely to become violent criminals in the ’60s, ’70s, and ’80s.

¹ Enthusiasm for the music and person of Justin Bieber.

1

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And with that we have our molecule: tetra-ethyl lead, the gasoline additive invented by General Motors in the 1920s to prevent knocking and pinging in high-performance engines. As auto sales boomed after World War II, and drivers in powerful new cars increasingly asked service station attendants to “fill ‘er up with ethyl,” they were unwittingly creating a crime wave two decades later.

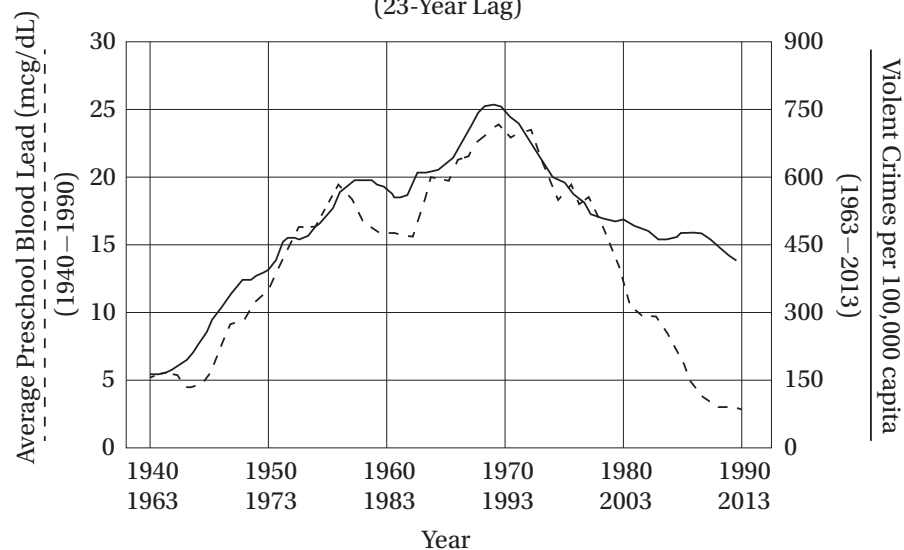
It was an exciting conjecture, and it prompted an immediate wave of . . . nothing. Nevin’s paper was almost completely ignored, and in one sense it’s easy to see why—Nevin is an economist, not a criminologist, and his paper was published in *Environmental Research*, not a journal with a big readership in the criminology community. What’s more, a single correlation between two curves isn’t all that impressive, econometrically speaking. Sales of vinyl LPs rose in the postwar period too, and then declined in the ’80s and ’90s. No matter how good the fit, if you only have a single correlation it might just be

a coincidence. You need to do something more to establish causality.

So in 2007, Nevin collected lead data and crime data for Australia, Canada, Great Britain, Finland, France, Italy, New Zealand and West Germany. Every time, the two curves fit each other astonishingly well.

The gasoline lead hypothesis helps explain some things we might not have realized even needed explaining. For example, murder rates have always been higher in big cities than in towns and small cities. Nevin suggests that, because big cities have lots of cars in a small area, they also had high densities of atmospheric lead during the postwar era. But as lead levels in gasoline decreased, the differences between big and small cities largely went away. And guess what? The difference in murder rates went away too. Today, homicide rates are similar in cities of all sizes. It may be that violent crime isn’t an inevitable consequence of being a big city after all.

PRESCHOOL BLOOD LEAD LEVELS VS. VIOLENT CRIME RATES IN THE U.S.
(23-Year Lag)



Source: Rick Nevin, *Lead Poisoning and The Bell Curve*, 2012

1

In the first paragraph, Karl Smith's work is presented primarily as

- A) a controversial sociological hypothesis.
- B) a warning about potentially dangerous economic trends.
- C) a useful model for conceptualizing a variety of phenomena.
- D) a potential medical solution to a persistent social problem.

2

The author suggests that promising research in the social sciences is sometimes ignored because it

- A) is not presented by authorities with the proper credentials.
- B) is not supported by controlled scientific experiments.
- C) relies on complex mathematical calculations that are not easily understood.
- D) uses historical data that are not necessarily valid in the modern era.

3

Which of the following provides the strongest evidence for the answer to the previous question?

- A) Lines 25–27 (“A recent study . . . later on”)
- B) Lines 49–52 (“In a 2000 paper . . . America”)
- C) Lines 68–72 (“Nevin is . . . community”)
- D) Lines 72–74 (“What’s more . . . speaking”)

4

According to the graph for which of the following time periods was the percent increase in per capita violent crime the greatest?

- A) 1940–1970
- B) 1963–1993
- C) 1970–1990
- D) 1993–2013

5

According to the graph, which decade of violent crime statistics provides the LEAST support to Rick Nevin's hypothesis?

- A) 1963–1973
- B) 1980–1990
- C) 1983–1993
- D) 2003–2013

6

The author mentions “sales of vinyl LPs” (line 74) primarily as an example of

- A) another economic factor that may explain a social trend.
- B) how harmful chemicals can be spread via consumer products.
- C) a statistic that may be more coincidental than explanatory.
- D) a counterintuitive trend in consumer behavior.

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7

The “complications” in line 22 are

- A) obstacles to gathering relevant data.
- B) controversies about theoretical models.
- C) challenges to the implementation of social policies.
- D) psychological problems.

8

The author regards the “drivers” in line 60 as

- A) inadvertent abettors.
- B) unintentional heroes.
- C) greedy consumers.
- D) devious conspirators.

9

In line 49, “even better” most nearly means

- A) less controversial.
- B) more correlative.
- C) easier to calculate.
- D) more aesthetically engaging.

10

The final paragraph (lines 85–98) serves primarily to

- A) suggest topics for future research.
- B) concede a theoretical drawback.
- C) propose a novel alternative.
- D) describe a supportive implication.

Questions 11–21 are based on the following passages.

Passage 1 is adapted from an essay written by John Aldridge in 1951. ©1951 by John Aldridge. Passage 2 is adapted from Brom Weber, “*Ernest Hemingway’s Genteel Bullfight*,” published in *The American Novel and the Nineteen Twenties*. ©1971 by Hodder Education.

Passage 1

By the time we were old enough to read Hemingway, he had become legendary. Like
 Line Lord Byron a century earlier, he had learned
 to play himself, his own best hero, with superb
 5 conviction. He was Hemingway of the rugged
 outdoor grin and the hairy chest posing beside a
 lion he had just shot. He was Tarzan Hemingway,
 crouching in the African bush with elephant gun
 at ready. He was War Correspondent Hemingway
 10 writing a play in the Hotel Florida in Madrid
 while thirty fascist shells crashed through
 the roof. Later, he was Task Force Hemingway
 swathed in ammunition belts and defending
 his post singlehandedly against fierce German
 15 attacks.

But even without the legend, the chest-beating, wisecracking pose that was later to seem so incredibly absurd, his impact upon us was tremendous. The feeling he gave us was one
 20 of immense expansiveness, freedom and, at the same time, absolute stability and control. We could follow him, imitate his cold detachment, through all the doubts and fears of adolescence and come out pure and untouched. The words
 25 he put down seemed to us to have been carved from the living stone of life. They conveyed exactly the taste, smell and feel of experience as it was, as it might possibly be. And so we began unconsciously to translate our own sensations
 30 into their terms and to impose on everything we did and felt the particular emotions they aroused in us.

The Hemingway time was a good time to be young. We had much then that the war later
 35 forced out of us, something far greater than Hemingway’s strong formative influence.

Later writers who lost or got rid of Hemingway have been able to find nothing to put in his place. They have rejected his time as untrue
 40 for them only to fail at finding themselves in their own time. Others, in their embarrassment at the hold he once had over them, have not profited by the lessons he had to teach, and still others were never touched by him at all. These last are
 45 perhaps the real unfortunates, for they have been denied access to a powerful tradition.

Passage 2

One wonders why Hemingway’s greatest works now seem unable to evoke the same sense of a tottering world that in the 1920s established
 50 Ernest Hemingway’s reputation. These novels should be speaking to us. Our social structure is as shaken, our philosophical despair as great, our everyday experience as unsatisfying. We have had more war than Hemingway ever dreamed
 55 of. Our violence—physical, emotional, and intellectual—is not inferior to that of the 1920s. Yet Hemingway’s great novels no longer seem to penetrate deeply the surface of existence. One begins to doubt that they ever did so significantly
 60 in the 1920s.

Hemingway’s novels indulged the dominant genteel tradition in American culture while seeming to repudiate it. They yielded to the functionalist, technological aesthetic of the
 65 culture instead of resisting in the manner of Frank Lloyd Wright. Hemingway, in effect, became a dupe of his culture rather than its moral-aesthetic conscience. As a consequence, the import of his work has diminished. There is some evidence
 70 from his stylistic evolution that Hemingway himself must have felt as much, for Hemingway’s famous stylistic economy frequently seems to conceal another kind of writer, with much richer rhetorical resources to hand. So, *Death in the*
 75 *Afternoon* (1932), Hemingway’s bullfighting opus and his first book after *A Farewell to Arms* (1929), reveals great uneasiness over his earlier accomplishment. In it, he defends his literary method with a doctrine of ambiguity: “If a writer
 80 of prose knows enough about what he is writing

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about he may omit things that he knows and the reader, if the writer is writing truly enough, will have a feeling of those things as strongly as though the writer had stated them.”

85 Hemingway made much the same theoretical point in another way in *Death in the Afternoon* apparently believing that a formal reduction of aesthetic complexity was the only kind of design that had value.

90 Perhaps the greatest irony of *Death in the Afternoon* is its unmistakably baroque prose, which Hemingway himself embarrassedly admitted was “flowery.” Reviewers, unable to challenge Hemingway’s expertise in the art of bullfighting, noted that its style was “awkward, tortuous, [and] belligerently clumsy.”

100 *Death in the Afternoon* is an extraordinarily self-indulgent, unruly, clownish, garrulous, and satiric book, with scrambled chronologies, willful digressions, mock-scholarly apparatuses, fictional interludes, and scathing allusions. Its inflated style can hardly penetrate the façade, let alone deflate humanity.

11

On which topic do the authors of the two passages most strongly disagree?

- A) The economy of Hemingway’s writing
- B) The incisiveness of Hemingway’s prose
- C) The sincerity of Hemingway’s portrayals
- D) The extent of Hemingway’s reputation

12

Which pair of sentences provides the strongest evidence for the answer to the previous question?

- A) Lines 5–7 (“He was . . . just shot”) and lines 85–89 (“Hemingway . . . had value”)
- B) Lines 37–39 (“Later writers . . . his place”) and lines 55–56 (“Our violence . . . the 1920s”)
- C) Lines 24–26 (“The words . . . stone of life”) and lines 57–58 (“Yet . . . existence”)
- D) Lines 34–36 (“We had much . . . influence”) and lines 90–93 (“Perhaps the greatest . . . was ‘flowery’”)

13

Which of the following best describes how each passage characterizes Hemingway?

- A) Passage 1 portrays him as a tortured poet, but Passage 2 portrays him as a crass amateur.
- B) Passage 1 portrays him as a master of refinement, but Passage 2 portrays him as a literary revolutionary.
- C) Passage 1 portrays him as a hero, but Passage 2 portrays him as a cultural conformist.
- D) Passage 1 portrays him as an absurd warmonger, but Passage 2 portrays him as an undisciplined artist.

14

Which statement about Hemingway is supported by both passages?

- A) He was an artistic pioneer, although he was underappreciated in his time.
- B) He was a consistent practitioner of spare and evocative prose.
- C) His characters serve as archetypes for masculine adventure.
- D) His wartime narratives do not fully capture the horrors of war.

15

In line 26, the phrase “living stone” most nearly means

- A) salient experience.
- B) inevitable regret.
- C) stubborn resistance.
- D) durable memorial.

16

Lines 28–32 (“And so we . . . aroused in us”) suggests that many of Hemingway’s readers were inclined to

- A) emulate his adventures.
- B) resent his glorification of war.
- C) imitate his literary style.
- D) identify with his language.

17

The “lessons” mentioned in line 43 most likely include stories of

- A) transformative romantic love.
- B) confidence in the face of danger.
- C) indulgent self-examination.
- D) corporate or political ambition.

18

In line 49, the word “tottering” is intended to evoke a sense of

- A) infantile frailty.
- B) economic instability.
- C) artistic immaturity.
- D) societal upheaval.

19

The author of Passage 1 would most likely regard the statement in lines 66–68 (“Hemingway, in effect . . . conscience”), with

- A) journalistic detachment.
- B) grudging acquiescence.
- C) vehement disagreement.
- D) good-natured amusement.

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20

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

- A) Lines 2–5 (“Like Lord . . . superb conviction”)
- B) Lines 28–32 (“And so . . . aroused in us”)
- C) Lines 34–36 (“We had much . . . formative influence”)
- D) Lines 39–41 (“They have rejected . . . own time”)

21

The author of Passage 2 suggests that, in comparison to Hemingway, Frank Lloyd Wright was relatively

- A) minimalist.
- B) iconoclastic.
- C) volatile.
- D) traditional.

Questions 22–32 are based on the following passage.

This passage is from S. K. Mukherjee, *“The Mysteries of the Strong Nuclear Force.”* ©2015 College Hill Coaching.

Line As any good contractor will tell you, a sound
structure requires stable materials. But atoms,
the building blocks of everything we know and
love—bunnies, brownies, and best friends—
5 don’t appear to be models of stability. Why are
some atoms, like sodium, so hyperactive while
others, like helium, are so aloof? Why do the
electrons that inhabit atoms jump around so
strangely, from one bizarrely shaped orbital to
10 another? And why do protons, the bits that
give atoms their heft and personality, stick
together at all?

We are told that every atom has a tiny
nucleus containing positively charged protons
15 and uncharged neutrons, swarmed by a cloud
of speedy electrons. We are also told that like
charges, such as protons, repel each other with
a force that shoots up to infinity as they get
closer. Even worse, you can’t get much closer
20 than two protons in the nucleus of an atom. So
what’s keeping atomic nuclei from flying apart?
Obviously, some other force must be at work
inside the atom, something that we can’t detect
at our human scale. Physicists call this the
25 “strong nuclear force.” But where does it
come from?

In order for this force to account for the
binding of protons in the nucleus, it must have
certain interesting features. First, it can’t have any
30 sizeable effect beyond the radius of the atom itself,
or it would play havoc with the nuclei of adjacent
atoms, destroying matter as we know it. Second,
it must perfectly balance the repulsive force of
electricity at an “equilibrium point” of about

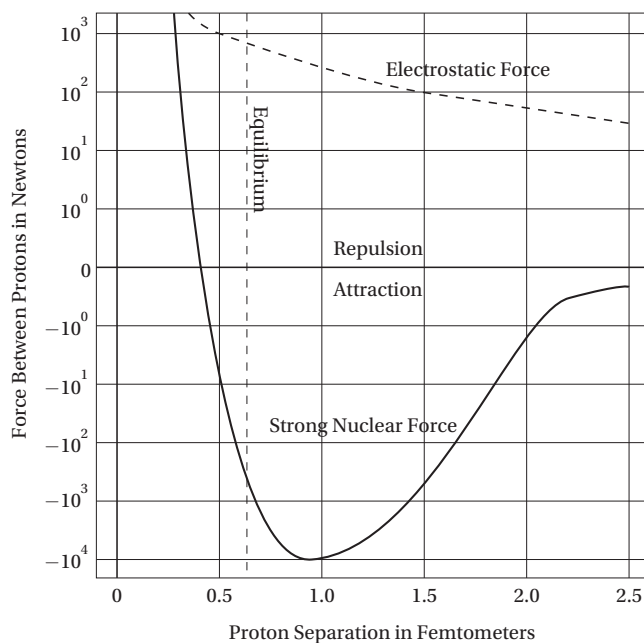
35 0.7×10^{-15} meters, the average distance between
bound protons, in order to create a stable nucleus.
Third, it must *repel* at even shorter distances, or
else neutrons (which don’t have any electrostatic
repulsion to balance the strong nuclear force)
40 would collapse into each other. The graph
shows the behavior of such a force relative
to the repulsive electrostatic force.

In 1935, Japanese physicist Hideki Yukawa
proposed that the nuclear force was conveyed by
a then-undiscovered heavy subatomic particle
45 he called the pi meson (or “pion”), which (unlike
the photon, which conveys the electrostatic
force) decays very quickly and therefore conveys
a powerful force only over a very short distance.
50 Professor Yukawa’s theory, however, was
dealt a mortal blow by a series of experiments
conducted at Los Alamos National Laboratory
in the early 1990s that demonstrated that pions
carry force only over distances greater than the
55 distance between bound protons. The pion was a
plumber’s wrench trying to do a tweezer’s job.

Current atomic theory suggests that the
strong nuclear force is most likely conveyed by
massless particles called “gluons” according
60 to the theory of quantum chromodynamics, or
QCD for short. According to QCD, protons and
neutrons are composed of smaller particles
called quarks, which are held together by the
aptly named gluons. This quark-binding force has
65 a “residue” that extends beyond the protons and
neutrons themselves to provide just enough force
to bind the protons and neutrons together.

If you’re hoping that QCD ties up atomic
behavior with a tidy little bow, you may be just
70 a bit disappointed. As a quantum theory, it
conceives of space and time as tiny chunks that
occasionally misbehave, rather than smooth
predictable quantities, and its mathematical
formulas are perhaps as hard to penetrate as the
75 nucleus itself.

ELECTROSTATIC AND STRONG NUCLEAR FORCES BETWEEN PROTONS



22

The primary purpose of the first paragraph (lines 1–12) is to

- A) describe a popular misconception.
- B) introduce a physical theory.
- C) suggest a scientific conundrum.
- D) present a personal account.

23

In line 7, “aloof” most nearly means

- A) impenetrable.
- B) formal.
- C) retracted.
- D) nonreactive.

24

The question in lines 10–12 (“And why . . . at all?”) indicates

- A) a minor curiosity to scientists exploring deeper questions.
- B) a socially significant puzzle that is unfortunately ignored in scientific circles.
- C) a humorous irony in an otherwise serious field of investigation.
- D) a central conundrum at the heart of an important scientific field.

25

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

- A) Lines 2–5 (“But atoms . . . stability”)
- B) Lines 19–20 (“Even worse . . . an atom”)
- C) Lines 55–56 (“The pion . . . tweezer’s job”)
- D) Lines 68–70 (“If you’re . . . disappointed”)

26

In lines 13–16, the repetition of the phrase “We are” serves primarily to emphasize

- A) the predominance of certain conceptions.
- B) the personal nature of scientific research.
- C) the effectiveness of a particular analogy.
- D) the deficiencies in public education.

27

Which of the following best describes the relationship between the electrostatic force and the strong nuclear force between protons at the equilibrium point as shown in the graph?

- A) The strong nuclear force is at its maximum, but the electrostatic force is not.
- B) The strong nuclear force is at its minimum, but the electrostatic force is near its maximum.
- C) The sum of the two forces is zero.
- D) The strong nuclear force is zero and the electrostatic force is greater than 100 Newtons.

28

According to the graph, the electrostatic repulsion between two protons separated by 1.5 femtometers is closest to

- A) 2 Newtons.
- B) 20 Newtons.
- C) 100 Newtons.
- D) 1,000 Newtons.

29

The “mortal blow” (line 51) to Hideki Yukawa’s theory was the fact that

- A) the existence of pions was not confirmed by experimental evidence.
- B) pions were discovered to be massless, thereby refuting his theory that they were heavy.
- C) experiments showed pions to be ineffective in the range required by atomic theory.
- D) pions had a destabilizing effect on atomic nuclei, rather than a stabilizing one.

30

Which of the following best describes the structure of the passage as a whole?

- A) a series of intuitive illustrations of a complex physical theory
- B) a description of a technical puzzle and the attempts to solve it
- C) an account of an experimental finding and its surprising implications
- D) a historical overview of a heated scientific controversy

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31

The author's writing style is particularly notable for its use of all of the following EXCEPT

- A) rhetorical questions.
- B) illustrative metaphors.
- C) technical specifications.
- D) appeals to common intuition.

32

In line 68, "ties up" most nearly means

- A) constrains restrictively.
- B) resolves neatly.
- C) obstructs completely.
- D) fastens securely.

Questions 33–42 are based on the following passage.

This passage is adapted from Jean-Jaques Rousseau, *"Discourse on Inequality and Social Contract."* Originally published in 1762.

Just as, before putting up a large building, the architect surveys and sounds the site to see if it will bear the weight, the wise legislator does not begin by laying down laws good in themselves, but by investigating the fitness of the people, for which they are destined, to receive them. Plato refused to legislate for the Arcadians and the Cyrenæans,¹ because he knew that both peoples were rich and could not tolerate equality. Also, good laws and bad men were found together in Crete, because Minos had inflicted discipline on a people already burdened with vice.

A thousand nations that have achieved earthly greatness could never have endured good laws. Even those nations that could have endured good laws could have done so only for a very brief period of their long history. Most peoples, like most men, are docile only in youth. As they grow old they become incorrigible. Once customs have become established and prejudices inveterate, it is dangerous and useless to attempt their reformation. The people, like the foolish and cowardly patients who rave at sight of the doctor, can no longer bear that any one should lay hands on its faults to remedy them.

There are indeed times in the history of States when, just as some kinds of illness turn men's heads and make them forget the past, periods of violence and revolution do to peoples what these crises do to individuals. Horror of the past takes the place of forgetfulness, and the state, set on fire by civil wars, is born again, so to speak, from its ashes, and takes on anew, fresh from the jaws of death, the vigor of youth. Such was Sparta at the time of Lycurgus.

But such events are rare exceptions, the cause of which is always to be found in the particular constitution of the state concerned. Such renewals cannot even happen twice to the same nation, for it can make itself free as long as it remains barbarous, but not when the civic impulse has lost its vigor. Then disturbances may destroy it, but revolutions cannot mend it: it needs a master, and not a liberator. Free peoples, be mindful of this maxim: "Liberty may be gained, but can never be recovered."

There is for nations, as for men, a threshold of maturity before which they should not be made subject to laws. But the maturity of a people is not always easily recognizable, and, if it is anticipated, the work is spoiled. One people is amenable to discipline from the beginning; another, not after ten centuries. Russia will never be really civilized, because it was civilized too soon. Peter the Great had a genius for imitation, but he lacked true genius, which is creative and makes all from nothing. He did some good things, but most of what he did was out of place. He saw that his nation was barbarous, but did not see that it was not ripe for civilization: he wanted to civilize it when it needed only hardening. His first wish was to make Germans or Englishmen, when he ought to have been making Russians; and he prevented his subjects from ever becoming what they might have been by persuading them that they were what they are not. In this fashion too a French teacher turns out his pupil to be an infant prodigy, and for the rest of his life to be nothing whatsoever. The empire of Russia will aspire to conquer Europe, but will itself be conquered. The Tartars,² its subjects or neighbors, will become its masters and ours, by a revolution that I regard as inevitable.

¹ the peoples of two regions of ancient Greece

² a Mongol-Turkic tribe of Eurasia

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33

This passage is primarily concerned with

- A) restoring the reputation of some widely maligned leaders of the past.
- B) comparing the merits of various ancient systems of government.
- C) examining the social conditions that foster effective legal systems.
- D) establishing the philosophical basis for universal democracy.

34

In line 2, the word “sounds” most nearly means

- A) resonates.
- B) enunciates.
- C) probes.
- D) appears.

35

In the first paragraph, the author discusses the activities of an architect in order to make the point that

- A) the success of a nation’s civil code depends on the nature of its people.
- B) good laws must be based on sound philosophical principles.
- C) nations that lack good laws cannot support a professional class.
- D) effective government requires experts to design civic infrastructure.

36

The author suggests that long-established societies are characterized primarily by

- A) stubborn resistance to political change.
- B) an honorable respect for good laws.
- C) periodic but predictable social renewal.
- D) a tendency toward imperialist expansion.

37

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

- A) Lines 9–12 (“Also, good laws . . . vice”)
- B) Lines 19–21 (“Once customs . . . reformation”)
- C) Lines 30–34 (“Horror . . . vigor of youth”)
- D) Lines 71–73 (“The Tartars . . . as inevitable”)

38

In lines 17–18, the distinction between “peoples” and “men” is essentially one between

- A) barbarism and civilization.
- B) societies and individuals.
- C) youth and maturity.
- D) rebellion and obedience.

39

The author mentions “Sparta at the time of Lycurgus” (line 35) primarily as an example of a place where

- A) the citizens were paralyzed with fear in the face of invasion.
- B) the society was rejuvenated through conflict.
- C) the people lost sight of their own sacred traditions.
- D) the leaders had become foolish and cowardly.

40

In lines 37–38, the phrase “particular constitution of the state” refers most specifically to

- A) the documented rules by which a nation defines its governmental institutions.
- B) the social composition and cultural habits of a population.
- C) the enumeration of popular rights in a democratic society.
- D) a manifesto about the philosophical motivations for political change.

1

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41

In line 52, the phrase “amenable to discipline” most nearly means

- A) ready to be governed by the rule of law.
- B) susceptible to exploitation by neighboring countries.
- C) prepared to accept an oppressive ruler.
- D) trained for offensive or defensive military activity.

42

The author suggests that Peter the Great’s main flaw was

- A) military ruthlessness.
- B) undue reverence for custom.
- C) excessive political guile.
- D) irresolution in exerting control.

Questions 43–52 are based on the following passage.

This passage is adapted from Bertrand Russell, *A History of Western Philosophy*. ©1945 by Bertrand Russell, renewed by Edith Russell. Reprinted with permission of Simon & Schuster.

To understand the views of Aristotle, as of most
 Line his imaginative background. Every philosopher,
 in addition to the formal system that he offers to
 5 the world, has another much simpler system of
 which he may be quite unaware. If he is aware of
 it, he probably realizes that it won't quite do; he
 therefore conceals it, and sets forth something more
 sophisticated, which he believes because it is like
 10 his crude system, but which he asks others to accept
 because he thinks he has made it such as cannot
 be disproved. The sophistication comes in by way
 of refutation of refutations, but this alone will never
 give a positive result. It shows, at best, that a theory
 15 may be true, not that it must be. The positive result,
 however little the philosopher may realize it, is
 due to his imaginative preconceptions, or to what
 Santayana calls "animal faith."

In relation to physics, Aristotle's imaginative
 20 background was very different from that of a
 modern student. Nowadays, students begin with
 mechanics, which, by its very name, suggests
 machines. They are accustomed to automobiles
 and airplanes; they do not, even in the dimmest
 25 recesses of their subconscious imagination,
 think that an automobile contains some sort of
 horse inside, or that an airplane flies because
 its wings are those of a bird possessing magical
 powers. Animals have lost their importance in
 30 our imaginative pictures of the world, in which
 humans stand comparatively alone as masters of
 a mainly lifeless and largely subservient material
 environment.

To the ancient Greek, attempting to give
 35 a scientific account of motion, the purely
 mechanical view hardly suggested itself,
 except in the case of a few men of genius such
 as Democritus and Archimedes. Two sets of
 phenomena seemed important: the movements
 40 of animals, and the movements of the heavenly
 bodies. To the modern man of science, the body
 of an animal is a very elaborate machine, with
 an enormously complex physical and chemical
 structure. Every new discovery consists in
 45 diminishing the apparent gulf between animals
 and machines. To the Greek, it seemed more
 natural to assimilate apparently lifeless motions
 to those of animals. A child still distinguishes live
 animals from other things by the fact that animals
 50 can move themselves. To many Greeks, and
 especially to Aristotle, this peculiarity suggested
 itself as the basis of a general theory of physics.

But how about the heavenly bodies? They
 differ from animals by the regularity of their
 55 movements, but this may be only due to their
 superior perfection. Every Greek philosopher,
 whatever he may have come to think in adult life,
 had been taught in childhood to regard the sun
 and moon as gods. Anaxagoras was prosecuted
 60 for impiety because he thought that they were
 not alive. It was natural that a philosopher who
 could no longer regard the heavenly bodies
 themselves as divine should think of them as
 moved by the will of a Divine Being who had a
 65 Hellenic love of order and geometric simplicity.
 Thus the ultimate source of all movement is
 Will: on earth the capricious Will of human
 beings, but in heaven the unchanging Will of the
 Supreme Artificer.

43

The passage as a whole primarily serves to

- A) contrast the ideas of several ancient Greek philosophers.
- B) examine the means by which philosophical ideas become popular.
- C) describe the conceptions that inform a particular mindset.
- D) discuss the debt that modern physics owes to ancient thinkers.

44

The statement that “animals have lost their importance” (line 29) means that

- A) humans no longer treat other species with appropriate respect.
- B) animistic beliefs no longer inform our physical theories.
- C) scientists no longer regard animal behavior as a productive topic of study.
- D) humans do not use animals for transportation to the extent that they once did.

45

The “simpler system” in line 5 is a

- A) method for translating complex writings of ancient thinkers.
- B) streamlined system for reaching logically valid conclusions.
- C) formal theory based on a very small number of assumptions.
- D) relatively unrefined way of thinking.

46

Which of the following statements about ancient Greek philosophers is best supported by the passage?

- A) Their astronomical theories were closely associated with their religious ideas.
- B) Their ideas about mechanics inspired many important technological innovations.
- C) They regarded human intellect as a divine gift, rather than a cultivated skill.
- D) They valued imagination and creativity even more than reason and logic.

47

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

- A) Lines 3–6 (“Every philosopher . . . quite unaware”)
- B) Lines 41–46 (“To the modern . . . animals and machines”)
- C) Lines 46–48 (“To the Greek . . . of animals”)
- D) Lines 61–65 (“It was natural . . . simplicity”)

48

In line 47, “assimilate” most nearly means

- A) incorporate.
- B) comprehend.
- C) embrace.
- D) liken.

49

The passage suggests that the “men of genius” (line 37) are noteworthy for their

- A) creative metaphors for the laws of motion.
- B) ability to integrate many different fields of study.
- C) effectiveness in articulating their ideas to others.
- D) willingness to disregard conventional wisdom.

50

Which of the following would best bridge the “gulf” in line 45?

- A) creating a system of gestures to help humans better communicate with dolphins
- B) writing a computer program that analyzes and categorizes mockingbird calls
- C) discovering the mechanical laws that describe bumblebee flight
- D) teaching modern students more about ancient Greek philosophy

51

The passage suggests that the “views of Aristotle” (line 1) are characterized primarily by their

- A) logical rigor.
- B) animistic tendencies.
- C) reliance on refutation.
- D) unwavering skepticism.

52

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

- A) Lines 3–6 (“Every philosopher . . . quite unaware”)
- B) Lines 12–14 (“The sophistication . . . positive result”)
- C) Lines 19–21 (“In relation . . . modern student”)
- D) Lines 46–48 (“To the Greek . . . animals”)

STOP

**If you finish before time is called, you may check your work on this section only.
Do not turn to any other section of the test.**