

[16-17] Choose the one that best completes the sentence.

16 _____ that everyone left the auditorium.

- ① So monotonously did he speak
- ② He so did speak monotonously
- ③ Monotonously did he speak so
- ④ So did he monotonously speak

17 Hoping for the president-elect to conform to the norms of business and politics is like _____.

- ① a square peg expecting to be fit a round hole in
- ② fitting a square peg expecting in a round hole
- ③ a round hole expecting a square peg to fit into
- ④ expecting a square peg to fit in a round hole

[18-19] Choose the one that makes the sentence grammatically INCORRECT.

18 The moment ①for people can ②no longer rely on the news media for facts, is ③when journalism loses its reason ④for being.

19 Every successful ①advertisement uses a creative strategy ②based on an idea that will attract the attention of the ③targeting consumer ④audience.

[20-21] Choose the one that is grammatically INCORRECT.

20

- ① The period during when people learned to melt iron is called the Iron Age.
- ② The place at which he lives is about one hundred miles east of New York.
- ③ That is Mrs. White who they say is the wealthiest woman in town.
- ④ This machine, which I have looked after for ten years, is still working perfectly.

21

- ① When he will arrive – no one knows for sure.
- ② People are curious to know when he will leave.
- ③ If he will arrive, the band will play the music.
- ④ Take a seat over there and wait, if you will.

[22-50] Read the following passages and answer the questions.

[22-23]

Asian carp were originally brought to the U.S. to control algae in southern aquaculture farms and, unfortunately, made their way into the Mississippi River through flooding. Over time, the carp swam north, up the Mississippi and into the river's tributaries. All eyes are now on the fish as they move toward the Great Lakes. In fact, an unprecedented binational effort between the U.S. and Canada has been launched to prevent the carp from invading the lakes. These fish are voracious predators of the tiniest prey, plankton, which is the basis of the entire Great Lakes food system. Given that Asian carp can eat up to 20 percent of their body weight in one day, their hefty appetites could harm the food web native species need to survive.

22 How does the author view the situation described in the passage?

- ① Negatively
- ② Incredulously
- ③ Tentatively
- ④ Positively

23 According to the passage, which of the following is NOT true about Asian carp?

- ① They were imported to America to control algae.
- ② Flooding allowed them into the Mississippi.
- ③ They are abundant throughout the Great Lakes.
- ④ They are outcompeting native fish species for food.

[24-25]

If Silicon Valley had its way, all humans would have abandoned analog products by now. We would be consuming music from the cloud, reading stories online, and sketching designs on battery-powered devices. And indeed, many of us do. And yet, we have also started an analog revolution. Sales of objects like vinyl records and paper notebooks have consistently grown over the past decade, as has their cultural relevance. Meanwhile, big brands in e-commerce like Amazon are rushing to open brick-and-mortar stores. Many assume it is nostalgia driving the switch, led by the wistful romance of aging Luddites. But in fact, many of analog's newest fans are millennials drawn to its raw utility: the designer who uses a paper notebook, for example, to sketch out a website's early look. Opting for less-modern technology might seem to make no sense. But humans are not machines. We are complex creatures, driven by emotions beyond our comprehension. And at its core, the human experience remains a deeply, truly analog one, no matter how many virtual platforms we embrace.

24 Which of the following is the best title for the passage?

- ① Why Millennials Are Attracted by Virtual Worlds
- ② How E-commerce Has Replaced Analog Products
- ③ How Human Nature Became Incomprehensible
- ④ Why Analog Things Matter in a Digital World

25 According to the passage, which of the following is NOT true?

- ① Although we accept virtuality, human experiences are analog.
- ② The cultural relevance of analog products has been increasing.
- ③ It is largely older generations who drive the analog revolution.
- ④ Many people read stories online and consume music from the cloud.

[26-27]

Have you ever heard of Ⓐ a double Irish? It is not a drink but one of the controversial tax strategies that help some American companies keep profits abroad at lower rates. Such strategies are at the heart of the Aug. 30 ruling by the European Union demanding that Ireland claw back \$14.5 billion in allegedly unpaid taxes from Apple, the world's most valuable tech company. The European regulators' investigation concluded that tax arrangements Ireland offered Apple in 1991 and 2007 were illegal, allowing the firm to pay annual tax rates of 0.005% to 1% on its European profits from 2003 to 2014. Those are much lower than Ireland's standard corporate rate, which is the second lowest in the EU, at 12.5%. In an open letter, CEO Tim Cook disputed the decision and vowed to appeal, adding, "Apple follows the law, and we pay all the taxes we owe." Ireland's Finance Minister said the country would also fight the ruling.

26 Which of the following is closest to what Ⓐ refers to?

- ① Apple's tax evasion in Ireland
- ② Ireland's two-tiered corporate tax rates
- ③ Doubled tax penalty for Ireland
- ④ The E.U.'s different standard for Ireland

27 According to the passage, which of the following is true?

- ① Ireland was ordered to recover \$14.5 billion from Apple.
- ② Apple was offered a low annual tax rate of 12.5% by Ireland.
- ③ Ireland is known for the lowest corporate rate in the E.U.
- ④ Apple acknowledged its European profits were illegal.

[28-30]

You may have felt sick when traveling in a car, train, or airplane. If so, you should take comfort because the queasiness you feel indicates your brain is functioning properly. Motion sickness researchers have found that while we are moving, our brains respond the same way they do when we are poisoned. It appears that because high-speed travel is a recent addition to human behavior, our brains have not adapted to it. As you travel at high speed, usually you are sitting down. Your brain gets signals from your body including your feet, buttocks, and back, that you are stationary. But your brain also gets signals from the balance sensors, little tubes of liquid in your inner ears, that you are moving forward at high speed. The mixed messages lead your brain to the incorrect assumption that you have perceived things incorrectly, and in the natural world, the only things that can make you perceive incorrectly are poisons. So, just to be safe, the body, believing you have been poisoned, automatically tries to flush out the toxin. In short, you get sick. However, if you stare out the window, the increased visual stimulation tells your brain that you are in fact moving, and this should make the nausea pass.

28 According to the passage, what is the cure for motion sickness?

- ① Stimulating your balance tubes
- ② Taking an antidote
- ③ Looking out the window
- ④ Having something to drink

29 According to the passage, what does having motion sickness imply?

- ① Your brain has adapted to travel
- ② Your body is too weak from travel.
- ③ You have been poisoned by toxic liquids.
- ④ Your body is functioning naturally.

30 According to the passage, which of the following is true?

- ① Mind and body work in complete coordination.
- ② Illness is the result of staring out the window.
- ③ Car sickness is an old problem caused by adaptation.
- ④ Conflicting sensory information causes car sickness.

[31-32]

Extroverted gorillas in captivity outlive their shy brethren, a new study in North American zoos and sanctuaries finds. Using methods adapted from studying human personality, researchers gauged 298 individual gorillas' temperaments. These gorillas were followed over 18 years and their life spans recorded. The results revealed the more sociable and active the gorilla, the longer it was likely to live. The results are consistent with studies of humans finding that Ⓐ. A researcher says that these findings highlight how understanding the natural history of personality is vital to ensuring the continued health and well-being of humans, gorillas, and other great apes. Studies on 243 people over 100 years old have found that positive and outgoing people seem more likely to reach that age. Researchers rated the animals' dominance, extroversion, neuroticism, and agreeableness. They found that only extroversion was linked to lifespan. This extroversion-longer life link was not affected by the gorilla's gender, age at assessment, or how many times the gorilla had been moved from facility to facility.

31 According to the passage, which of the following gorillas would live longest?

- ① A powerful, dominant male gorilla
- ② An agreeable outgoing female gorilla
- ③ A neurotic female gorilla with no offspring
- ④ An aggressive male gorilla relocated multiple times

32 According to the passage, which of the following best fits into Ⓐ?

- ① human extroverts outlive introverts
- ② highly regarded humans tend to live long
- ③ stressed humans tend to have a shorter lifespan
- ④ human longevity depends on genetic endowments

[33-34]

Blockchain is an enormous digital record open for anyone with internet access to see. This record is not maintained by any individual or organization, but by approximately 9,000 computers in a distributed network. The computers' owners volunteer to add their machines to the network because, in exchange for their computer's services, they sometimes receive payment. All the information in the record is permanent. It cannot be changed because each of the computers keeps a copy of the record. If you wanted to hack the system, you would have to hack every computer on the network which has so far proved impossible, despite many trying. The collective power of all these computers is greater than the world's top 500 supercomputers combined. New information is added to the record every few minutes, but it can be added only when all the computers signal their approval, which they do when they receive satisfactory proof that the new information is correct. Everybody knows how the system works, but nobody can change how it works because it is Ⓐ_____.

33 According to the passage, which of the following is true of blockchain?

- ① Its information is secure.
- ② It consists of 500 supercomputers.
- ③ Owners can delete its information.
- ④ People pay to become part of it.

34 From the context, which of the following best fits into Ⓐ?

- ① uncontrolled
- ② fully automated
- ③ regularly updated
- ④ freely available

[35-37]

Professor Constantine Slobodchikoff and his colleagues have been decoding the communication system of prairie dogs, rodents not known for their smarts. And yet, Slobodchikoff's team has evidence that prairie dogs have a complex language, which they are starting to understand. When prairie dogs see a predator, they warn one another using high-pitched chirps. To the untrained ear, these chirps may all sound the same, but they are not. Slobodchikoff thinks the alarm calls are Ⓐ "Rosetta Stone" in decoding prairie-dog language, because they occur in a context people can understand, enabling interpretation. In his research, Slobodchikoff records the alarm calls and subsequent escape behaviors of prairie dogs in response to approaching predators. Then, when no predator is present, he plays back these recorded alarm calls and films the prairie dogs' escape responses. If the escape responses to the playback match those when the predator was present, this suggests that Ⓑ_____. And indeed, there seems to be. Slobodchikoff has discovered they have distinct calls pertaining to different predators. The calls even specify the color, size, and shape of the predator.

35 Which of the following is the main theme of the passage?

- ① Scientists began to understand the language of prairie dogs.
- ② Scientists observed prairie dogs' peculiar escape behavior.
- ③ Prairie dog language is structurally comparable to human language.
- ④ Prairie dogs have an elaborate system of conveying diverse emotions.

36 What motivates Slobodchikoff to liken the calls to Ⓐ?

- ① Presence of interpretive clues
- ② Absence of concrete data in the past
- ③ Restrictive nature of the call vocalization
- ④ Historical significance in language science

37 Which of the following best fits into Ⓑ?

- ① their escape responses exhibit great variation
- ② encoded information is beyond comprehension
- ③ meaningful information is encoded in the calls
- ④ their responses are biologically programmed reflexes

[38-40]

When it comes to automotive technology, self-driving cars are all the rage. These cars will be safer, cleaner, and more fuel-efficient than their human-driven counterparts. And yet, they can never be totally safe, raising an impossible ethical dilemma of algorithmic morality. How should the car be programmed to act in the event of an unavoidable accident? Should it minimize the loss of life, even if it means sacrificing the occupants, or should it protect the occupants at all costs? Who would buy a car programmed to sacrifice the owner? Some scientists set out to discover the public's opinion using the new science of experimental ethics. This involves posing ethical dilemmas to a large number of people to see how they respond.

Ⓐ The result of their experiments are interesting, if predictable. In general, people are comfortable with the idea that self-driving vehicles should be programmed to minimize the death toll. This utilitarian approach is certainly laudable but the participants were willing to go only so far. Participants were not as confident that autonomous vehicles would be programmed that way in reality and for a good reason: they actually wished others to cruise in utilitarian autonomous vehicles, more than they wanted to buy utilitarian autonomous vehicles themselves. And therein lies the paradox. People are in favor of cars that sacrifice the occupant to save other lives as long they do not have to drive one themselves.

38 Which of the following is the main topic of the passage?

- ① Pros and cons of autonomous automobiles
- ② Defective algorithms of self-driving vehicles
- ③ Ethical dilemmas of autonomous vehicles
- ④ Ethically programmed vehicles for non-ethical users

39 Which of the following is implied by Ⓐ?

- Ⓐ People respond tactfully to experimenters.
- Ⓑ People have accustomed to a computerized world.
- Ⓒ People have become increasingly utilitarian recently.
- Ⓓ People hesitate to sacrifice themselves to save others.

40 Which of the following describes the paradox of a utilitarian self-driving car?

- Ⓐ Others should drive it, but not me.
- Ⓑ It saves lives but costs money.
- Ⓒ I want to drive it, but not buy it.
- Ⓓ No one else can ride in it, only me.

[41-42]

Under the influence of neo-Gothic art, Antoni Gaudi was part of the modernist movement which reached its peak in the late 19th and early 20th centuries. His work transcended mainstream modernism, culminating in an organic style inspired by natural forms. Gaudi Ⓐ _____ drew detailed plans of his works, instead preferring to create them as three-dimensional scale models and molding the details as he conceived them. From 1915, Gaudi devoted himself almost exclusively to his magnum opus, the Sagrada Familia, a synthesis of his architectural evolution. After completion of the crypt and the apse, still in Gothic style, the rest of the church is conceived in an organic style, imitating natural shapes with their abundance of ruled surfaces. He intended the interior to resemble a forest, with inclined columns like branching trees. Gaudi applied all of his previous experimental findings in this project, from works such as the Park Guell and the crypt of the Colonia Guell, creating a church that is at once structurally perfect, harmonious, and aesthetically satisfying.

41 Which of the following best fits into Ⓐ?

- Ⓐ usually Ⓑ meticulously
- Ⓒ obsessively Ⓓ rarely

42 According to the passage, which of the following is NOT true?

- Ⓐ The Sagrada Familia is an early example of modernistic architecture.
- Ⓑ Gaudi experimented while designing Park Guell and Colonia Guell.
- Ⓒ Gaudi's architectural work is not limited to mainstream modernism.
- Ⓓ Gaudi's magnum opus combines a Gothic style and natural shapes.

[43-44]

A recent study examined three areas of father-daughter relationships: engagement, accessibility, and responsibility, within the context of daughters' self-esteem and life satisfaction. Ⓐ The researchers defined engagement as a father's direct interaction with his child, accessibility as his physical or psychological availability, and responsibility as his provision for the care of the child. Each of these types of involvement directly relates to a child's well-being, the researchers assumed. "What most heavily affects children's current and future behavior is the long term parent 'residue' within the children that is encapsulated within the children's retrospective perceptions of their parents," the authors wrote. Ⓑ For the study, female participants between the ages of 18 and 21 were recruited and completed an in-depth psychological questionnaire. Ⓒ Overall, results supported the prediction that the retrospective perceptions of a father's involvement have a moderately strong positive relationship with the self-esteem of emerging adult daughters. When emerging adult daughters' retrospective perceptions of father involvement during adolescence are higher, the self-esteem of daughters is also higher. Ⓓ Likewise, there was a positive relationship between perceived levels of father involvement and the life satisfaction level of their daughters.

43 Which of the following is the best place for the sentence below?

What is unique about this study, then, is that it is all about a daughter's perception of her father's involvement and not the facts of his involvement.

- Ⓐ Ⓐ Ⓑ Ⓑ
- Ⓒ Ⓒ Ⓓ Ⓓ

44 According to the passage, which of the following is true?

- Ⓐ Accessibility is defined as a father's direct interaction with his child.
- Ⓑ The researchers used thorough questionnaires completed by emerging adults.
- Ⓒ The researchers' assumption on the topic belies the result.
- Ⓓ Father's engagement is not fundamental to a daughter's well-being.

[45-47]

In so many ways, the gadgets seen in Star Trek remind us that the show is science fiction, a fantasy world inspired by the one we live in. And at times, the show can act as a glimpse into the future. The medical tricorder, that all-in-one portable device that can accurately diagnose anything, sits somewhere in the middle of that spectrum. Back in 2012, the Tricorder Competition challenged engineers to create a device weighing less than five pounds that could accurately diagnose a fixed set of 13 health conditions. While the medical tricorder seen in Star Trek is a single, handheld device, the one in our immediate future might be more ① _____ to a high-tech version of an old-school doctor's bag. The prototypes designed by two finalists are tiny devices that come packed into a single, portable carrier. ② One of the prototypes has a miniature EKG heart monitor, a small wireless blood pressure cuff, and a small thermometer to monitor vital signs. An accompanying app takes users through a series of questionnaires on symptoms and other medical information. Tiny samples of blood can test for things like anemia and diabetes. A miniature otoscope lets users take pictures of the inside of their ears, which are sent to an algorithm that can detect infection. The technology is currently about 85 percent accurate when compared to standard physician diagnoses. A similar adapter takes a picture of moles and skin lesions to diagnose melanoma with 90 percent accuracy.

45 Which of the following best fits into ①?

- ① beneficial ② instrumental
- ③ superfluous ④ analogous

46 According to the passage, which of the following is NOT true of ②?

- ① It is portable and can diagnose 13 health conditions.
- ② It can take pictures and detect infection.
- ③ It has devices to monitor the heart and vital signs.
- ④ It is encased in an old-school doctor's bag.

47 Which of the following is the main theme of the passage?

- ① The tricorder technology is about 85 percent accurate.
- ② Star Trek-inspired medical devices are under development.
- ③ The tricorder has an app that asks users their symptoms.
- ④ The winner of the Tricorder Competition appeared on Star Trek.

[48-50]

Human Acts is a book that could easily founder under the weight of its subject matter. Neither inviting nor shying away from modern-day parallels, Han Kang neatly unpacks the social and political catalysts behind the massacre and maps its lengthy, toxic fallout. But what is remarkable is how she accomplishes this while still making it a novel of blood and bone. The characters frequently address themselves to an unnamed 'You.' Sometimes 'You' is the dead, occasionally it is the reader but often, and most disturbingly, ① "You" is who people were before the violence and have now become irrevocably exiled from. This sense of ② _____ is most obvious when a dead boy's soul converses with his own rotting flesh; it is here that the language comes closest to the gothic lyricism of Han's previous book, *The Vegetarian*. At least the boy possesses a soul. Many of the other victims are no longer certain that they do, and their shame at having survived is palpable. By choosing the novel as her form, then allowing it to do what it does best, take readers to the very center of a life that is not their own, Han prepares us for one of the most important questions of our times: "What is humanity? What do we have to do to keep humanity as one thing and not another? She never answers, but this act of unflinching ③ _____ seems as good a place to start as any.

48 Which of the following is closest in meaning to ①?

- ① 'You' is the offspring of violent confrontation.
- ② 'You' is transformed into previous selves.
- ③ 'You' is characters prior to a permanent change.
- ④ 'You' is an exiled refugee in another country.

49 Which one of the following ordered pairs best fits into ② and ③?

- ① confirmation – withdrawal
- ② engagement – attestation
- ③ dislocation – witness
- ④ compatibility – spectacle

50 Which of the following is NOT true of the passage?

- ① The passage is a critical review of a literary work.
- ② The subject matter of the work is rather serious and disturbing.
- ③ In this novel, Han keeps the grotesque and poetic style of the earlier one.
- ④ Han focuses on analyzing an event and clearly answers an important question.