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문항배점 : [1-10] 1점 / [11-20] 1.5점 / [21-35] 2점 / [36-45] 2.5점 / [46-50] 4점

[1-2] Choose the one that is grammatically NOT correct. (각 1점)

[1] Most air filters improve air quality ① by trapping harmful pollutants in a filter. Molekule takes that idea one step further--② by destroying them altogether. The key is its specially coated nanofilter, which is designed ③ to react with light in a way that prevents toxins, including mold and bacteria particles, ④ to grow back.

[2] In the future, our cars will be smart, and our tires will be smarter. For starters, ① it's airless, eliminating the need to worry about pounds ② per a square inch. It's also made from recycled materials in an effort to reduce waste. But the most impressive feature may be ③ its 3-D-printed treads, which can be swapped ④ in and out to accommodate various road conditions.

[3-6] Choose the expression that is closest in meaning to the underlined part. (각 1점)

[3] Anyone who's ever sipped coffee knows how temperature can affect taste: if it's too hot, it'll scald your mouth; too cold and it's barely worth drinking.
① burn ② irritate ③ numb ④ torture

[4] "Makeup is like a secret weapon," says pop superstar Rihanna. "It can go from very subtle to a complete transformation." But for many, that secret weapon is too secret: makeup companies often cater to women with light to medium skin tones, both in products and advertising, and sideline women of color.
① beautify ② exclude ③ highlight ④ sidekick

[5] It took a long time for the earth to create the Alps--a lot longer than it's taking humans to wreck them.
① conquer ② exploit ③ ruin ④ sustain

[6] Prozac, an antidepressant drug, was introduced in 1987. It was an immediate hit; in just three years, 2 million people around the world were taking it, and pharmaceutical companies began churning out their own only slightly different versions of the drug soon after.
① mass-producing ② pilot-marketing
③ re-searching ④ re-transforming

[7-10] Choose the most appropriate word(s) for the blank. (각 1점)

[7] The same facial expressions are associated with the same emotions, regardless of culture or language. There are some facial expressions of emotion which are _____ characteristic of the human species.
① culturally ② linguistically ③ randomly ④ universally

[8] Many people give hospice _____ reviews. Lynn Pares enthused about her experience from 2013 to 2014 with Family Hospice of Colorado.
① awful ② glowing ③ indifferent ④ typical

[9] New gender-neutral terms such as caretaker and parenting are recently being used to try to avoid the stereotypical association of women with child care. Yet even the magazine called *Parenting,* which claims to address contemporary parents, displays mothers almost _____.
① conclusively ② equally ③ exclusively ④ never

[10] "I fell in love for the first time while I was still at school," she has revealed. "When I was in grade three, I had a _____ this really big guy. I can't think of his name now, but it was great."
① dream about ② crush on
③ problem with ④ rumor about

[11-13] Read the following passage and answer the questions. (각 1.5점)

If we didn't already know that Rudolph the Red-Nosed Reindeer was special, that shiny nose of his could have resulted from the one-in-a-million transfer of genetic material from a brilliant colored coral found in the Red Sea. Perhaps it entered his mother's bloodstream when she scraped against the coral during a crash water landing while pregnant with Rudolph and then the DNA was passed to her unborn calf. At least that's what a smart scientist from Johns Hopkins University speculated might explain the nose that guided Santa and his sleigh on that famous foggy Christmas eve. "Mobile genetic elements," said Steve Farber, a Hopkins biology professor, "are derived from viruses and have the amazing ability to cut and insert chunks of DNA into the genome of its host."

While most children and probably most of their parents accept the beloved holiday creatures as they are, scientists want us to understand the world around us, even if it's in a cherished Christmas storybook. Rather than suspending disbelief, scientists tend to look to peer-reviewed studies first to see if there is some solid explanation for what they've witnessed, or they craft their own trials, Farber said. Rudolph might be as easy as a (A) test to identify the coral DNA. And his offspring would carry the same (A) rearrangements containing it as well.

"I've proposed a number of ways this could happen, if you're willing to forgo the impossibilities in the system. I'm just having fun," added Bah, a researcher.

[11] Which of the following best fits in (A)?
① experimental ② synthetic
③ genetic ④ environmental

[12] Which of the following would be best for the title?
① Why Is Rudolph's Nose So Bright?
② Scientific Examination of Rudolph Is Popular
③ Christmas Stories Are Very Scientific
④ The DNA of Rudolph Is Completely Analyzed

[13] Which of the following is true about Rudolph?
① He is not a deer.
② He is historically true.
③ His nose is not really bright.
④ He may have glowing genes.

[14-16] Read the following passage and answer the questions. (각 1.5점)

Vatican City has been governed by men since it was established as an independent state in 1929. A year ago, however, a woman joined the upper ranks: Barbara Jatta, the first female director of the Vatican Museums. In the 12 months since her appointment, Ms. Jatta has put her stamp on the role, resisting some of her predecessor's initiatives and forging her own path. Ms. Jatta was the only woman on an initial list of six candidates, and she was chosen by Pope Francis. In the post since January, she oversees some 200,000 objects and an array of museums, papal apartments, sculpture courtyards and other sites, including the Sistine Chapel. The chapel is one of the Roman Catholic Church's holiest places, where popes are elected. It is also packed almost daily with ever-larger crowds scrambling to gaze at Michelangelo's famous frescoed ceiling. The Vatican Museums say visitor numbers in 2017 are expected to reach a record, significantly exceeding the six million that Ms. Jatta's predecessor, Antonio Paolucci, defined as an annual upper limit. The escalating totals pose the toughest challenge to Ms. Jatta's directorship. Ms. Jatta is friendly yet firm, and she expresses high ambitions for herself and for the institution. When she heard of her nomination for the Vatican Museums role, she said, "it came as a shock at

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first, to face such a big change."

Eike Schmidt, the German director of the Uffizi Gallery in Florence, said Ms. Jatta's appointment was a positive sign. "Within the male-dominated Vatican, to give such a prominent role to a woman was very good news," he said, adding that he hoped the world of culture would soon "move beyond" gender considerations and "look at people for what they did and what they do."

Running the Vatican Museums is a (A) job. Ms. Jatta is responsible for preserving, displaying and sharing knowledge of all of the treasures accumulated by the popes over the centuries. In their breadth, history and caliber, the Vatican Museums make the Palace of Versailles in France look like a flashy upstart.

[14] Which of the following is true?
① The Sistine Chapel is one of the Roman Catholic Churches.
② Antonio Paolucci is an assistant to Barbara Jatta.
③ The numbers of visitors are slowly decreasing.
④ Eike Schmidt dislikes Pope Francis's final decision.

[15] Which of the following is NOT true about Barbara Jatta?
① She is the first female director of the Vatican Museums.
② She is just trying to follow her predecessors.
③ She leads the Vatican Museums.
④ She is shaking things up.

[16] Which of the following best fits in (A)?
① terrible ② routine ③ trivial ④ colossal

[17-18] Read the following passage and answer the questions. (각 1.5점)

Turning Torso is neo-futurist residential skyscraper in Malmö, Sweden and the tallest building in Scandinavia. It is regarded as the first twisted skyscraper in the world, and the tower reaches a height of 190 meters with 54 stories. Turning Torso is based on a sculpture by Santiago Calatrava, who is a Spanish architect, structural engineer, sculptor and painter.

This is a solid immobile building constructed in nine segments of five-story pentagons that twist relative to each other as it rises; the topmost segment is twisted 90 degrees clockwise with respect to the ground floor. Each floor consists of an irregular pentagonal shape rotating around the vertical core, which is supported by an exterior steel framework. The two bottom segments are intended as office space. Segments three to nine house 147 apartments.

Construction started in the summer of 2001. One reason for building Turning Torso was to re-establish a recognizable skyline for Malmö since the removal in 2002 of the Kockums Crane, which was located less than one kilometer from Turning Torso. The local politicians deemed it important for the inhabitants to have a new symbol for Malmö in lieu of the crane that had been used for shipbuilding and somewhat symbolized the city's blue collar roots.

The construction of part of this building was featured on Discovery Channel Extreme Engineering TV programme which showed how a floor of the building was constructed.

The apartments were initially supposed to be sold, but insufficient interest resulted in the apartments being let. The owner has several times unsuccessfully tried to sell the building. The construction costs were almost double the estimate.

[17] Which of the following would be best for the title?
① The Masterpiece of a Swedish Architect
② The Features of Turning Torso
③ The History of Malmö
④ The Sales of the Kockums Crane

[18] Which of the following is true about Turning Torso?
① It faithfully followed retrospective trend.
② An exterior steel framework supports the vertical core.
③ The Kockums Crane still stands and rivals it in height.
④ The apartments were originally intended to be let.

[19-20] Read the following passage and answer the questions. (각 1.5점)

Osiris, also called Usir, is one of the most important gods of ancient Egypt. The origin of Osiris is obscure; he was a local god of Busiris, in Lower Egypt, and may have been a personification of underworld fertility. By about 2400 BCE, however, Osiris clearly played a double role: he was both a god of fertility and the embodiment of the dead and resurrected king. This dual role was in turn combined with the Egyptian concept of divine kingship: the king at death became Osiris, god of the underworld; and the dead king's son, the living king, was identified with Horus, a god of the sky. Osiris and Horus were thus father and son. The goddess Isis was the mother of the king and was thus the mother of Horus and consort of Osiris. The god Seth was considered the murderer of Osiris and adversary of Horus.

Osiris was not only ruler of the dead but also the power that granted all life from the underworld, from sprouting vegetation to the annual flood of the Nile River. From about 2000 BCE onward it was believed that every man, not just the deceased kings, became associated with Osiris at death. This identification with Osiris, however, did not imply resurrection, for even Osiris did not rise from the dead. Instead, it signified the renewal of life both in the next world and through one's descendants on Earth. In this universalized form, Osiris's cult spread throughout Egypt, often joining with the cults of local fertility and underworld deities.

The oldest known depiction of Osiris dates back to about 2300 BCE, but representations of him are rare before the New Kingdom (1539-1075 BCE), when he was shown in an archaizing form as a mummy with his arms crossed on his breast, one hand holding a crook, the other a flail. On his head was the crown, composed of the white crown of Upper Egypt and two ostrich feathers.

[19] Which of the following would be best for the title?
① The Familial Lineage of Osiris
② The Death of Osiris
③ The Cult of Osiris in Ancient Egypt
④ The Mummification of Osiris

[20] Which of the following is NOT true?
① Osiris first appeared as one of the local gods in Lower Egypt.
② Seth murdered Osiris, who was succeeded by Horus.
③ As a symbol for resurrection, Osiris came back to life from the dead.
④ One form of the representations of Osiris was that of a mummy in the New Kingdom.

[21-23] Read the following passage and answer the questions. (각 2점)

A lot of human beings put a high value on curiosity, like parents who want to get their children into exclusive nursery schools.

Orangutans in the wild take a different approach. These great apes that live mostly alone in the forests of Borneo and Sumatra, are quite cautious, as if they had heard (A) <u>the proverb about the cat</u>. But orangutans who spend a lot of time with human beings when they are young turn out to be much more inquisitive, and, apparently as a result, better at all sorts of cognitive tests.

Laura A. Damerius and colleagues from the University of Zurich put 61 orangutans in rehabilitation centers through a variety of tests. The centers have some orangutans that were raised as pets and then got too big to handle, and others who came from the wild, where palm oil plantation development had wiped out their home territory.

First, they exposed them to new foods and plastic snakes and other novelties. The ones who had spent their youth in the forest learned the lessons of (B) well. They didn't try new foods, avoided the fake snake and in general showed the expected lack of curiosity.

Which makes sense. "Imagine you were dropped in the middle of a rain forest," said Dr. Damerius. It would be unwise to touch all the plants, let alone pop them in your mouth.

But the orangutans raised by humans or brought to a rehab center at a young age experienced a relatively safe environment and human role models who were themselves

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curious. They were far more likely to eat the dyed purple rice or potato mush, and to investigate a fake snake.

In the second part of the experiment, the researchers used a variety of cognitive tests, requiring the apes to figure out how to open a box, or reach into a chamber in an awkward way to get a treat, or other tasks.

The more curious orangutans did much better. Dr. Damerius said the research showed several things. It confirmed what is called the captivity effect, that time spent in a zoo or other safe environment promotes curiosity.

[21] Which of the following best exemplifies (A)?
① A cat has nine lives.
② Curiosity killed the cat.
③ A cat in grass is a tiger in the jungle.
④ An old cat will not learn how to dance.

[22] Which of the following best fits in (B)?
① caution ② experience ③ failure ④ life

[23] Which of the following is true?
① Orangutans are enemies of snakes.
② Orangutans unexposed to humans are creative.
③ Orangutans like to eat the purple rice and potato mush.
④ The captivity situation stimulates curiosity of orangutans.

[24-26] Read the following passage and answer the questions. (각 2점)

Imagine a "borderless world" in which culture, trade, commerce, money, and even people move freely from one place to another. Popular culture is widely shared, whether it be Japanese sushi or U.S. running shoes, and the English speaker who answers questions over the telephone about your credit card account is as likely to be in India or Ireland as in the United States.

There is no need to imagine this world, for we are already living in the age of globalization. African tribal youngsters wear Simpsons T-shirts; Thai teens dance to techno music; American children collect Hello Kitty items. Ethnic accessories have become a fashion statement in the United States, and Asian martial arts have swept the world.

What caused this great wave of cultural diffusion? First, sociologists take note of advances in communications technology. Satellite TV, cell phones, the Internet, and the like allow information to flow freely across the world, linking global markets. In 2008, this process reached the point where consumers could view videos on handheld devices and surf the Internet on their wireless cell phones, shopping online at Amazon.com and other commercial websites from cars, airports, and cafeterias. Second, corporations in the industrial nations have become multinational, with both factories and markets in developing countries. Business leaders welcome the opportunity to sell consumer goods in populous countries such as China. Third, these multinational firms have cooperated with global financial institutions, organizations, and governments to promote free trade--unrestricted or lightly restricted commerce across national borders.

Globalization is not universally welcomed. Many critics see the dominance of "business without borders" as benefiting the rich, particularly the very wealthy in industrial countries, at the expense of the poor in less developed nations. They consider globalization to be a successor to the imperialism and colonialism that oppressed Third World nations for centuries.

Another criticism of globalization comes from people who feel overwhelmed by global culture. Embedded in the concept globalization is the notion of the cultural domination of developing nations by more affluent nations. (A), people lose their traditional values and begin to identify with the culture of dominant nations.

[24] Which of the following best fits in (A)?
① Simply put ② Simply putting
③ Simply say it ④ Simply saying it

[25] Which of the following does NOT directly contribute to cultural globalization?
① free trade ② cultural imperialism
③ multinational corporations ④ communications technology

[26] Which of the following is true?
① Everyone is happy about globalization.
② Globalization is another name for Americanization.
③ Every corner of the world is affected by globalization.
④ Questions about credit card accounts are dealt with only in English.

[27-29] Read the following passage and answer the questions. (각 2점)

Modern medicine has developed the God-like power to stabilize the vital signs that spiral out of control as a person approaches death, and to then keep that person alive despite her inability to breathe, eat or drink. It wields this power liberally. As an intensive-care unit (ICU) nurse, I am haunted by memories of patients who were stabilized in intensive care so that their catastrophic injuries or diseases did not kill them, but who were left unable to communicate or do anything but receive medical care. When I am face-to-face with a patient like this--someone who will never again be able to communicate, and who has been placed on the treadmill of continuous medical care--I feel the same type of shame as when I walk by a cold, crippled homeless person on the sidewalk. The wrongness is just as obvious. When I stick a needle into his arm, it feels as though I am kicking a homeless person.

It's a moral crisis hiding in plain sight, yet the people involved claim to be mere cogs in the machine. When I asked an ICU attending physician why families aren't given data and clear explanations of probable outcomes rather than best-case scenarios and "only time will tell" conversations, he said, "palliative care unit (PCU) people can do that. In the ICU, we don't really have time." Another physician mentioned the "(A) of the system." It falls to the general public--the patients--to take the initiative in reforming the excesses of modern medical care.

You can determine your fate by completing an advance directive. This is a legal document in which you can explain what measures should be undertaken if you are unable to communicate; name a health care proxy who can communicate your wishes to medical providers; and lay out how you envision the end of your life. If you don't want to be kept alive on life support, you can indicate as much in your advance directive. If you want the longest life possible no matter what, you can affirm this wish. Either way, families and care providers should know. It will help move our medical system toward a more humane approach to end-of-life care.

[27] What is the occupation of the author?
① physician ② surgeon ③ nurse ④ pharmacist

[28] Which of the following best fits in (A)?
① privilege ② advantage ③ flexibility ④ inertia

[29] Which of the following is true?
① ICU is the perfect unit for patients.
② Homeless people are also patients.
③ An advance directive is mandatory.
④ People should make end-of-life care decisions.

[30-32] Read the following passage and answer the questions. (각 2점)

Andy Warhol was an American artist, director and producer who was a leading figure in the visual art movement known as pop art. His works explore the relationship between artistic expression, celebrity culture, and advertising that flourished by the 1960s, and span a variety of media, including painting, silkscreening, photography, film, and sculpture. Some of his best known works include the silkscreen paintings--Campbell's Soup Cans (1962) and Marilyn Diptych (1962)--the experimental film *Chelsea Girls* (1966), and the multimedia events known as the Exploding Plastic Inevitable (1966-67).

Born and raised in Pittsburgh, Warhol initially pursued a successful career as a commercial illustrator. After exhibiting his work in several galleries in the late 1950s, he began to receive recognition as an influential and controversial artist. His New York studio, The Factory, became a well-known gathering place that brought together

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distinguished intellectuals, drag queens, playwrights, Bohemian street people, Hollywood celebrities, and wealthy patrons. He promoted a collection of personalities known as Warhol superstars, and is credited with coining the widely used expression "15 minutes of fame." In the late 1960s, he managed and produced the experimental rock band The Velvet Underground and founded *Interview* magazine. He authored numerous books, including *The Philosophy of Andy Warhol and Popism: The Warhol Sixties*. He is also notable as a gay man who lived openly as such before the gay liberation movement. After a gallbladder surgery in 1987, Warhol died in February of that year at the age of 58.

Warhol has been the subject of numerous retrospective exhibitions, books, and feature and documentary films. The Andy Warhol Museum in his native city of Pittsburgh, which holds an extensive permanent collection of art and archives, is the largest museum in the United States dedicated to a single artist. Many of his creations are very collectible and highly valuable. The highest price ever paid for a Warhol painting is US $105 million for a 1963 canvas titled *Silver Car Crash (Double Disaster)*. A 2009 article in *The Economist* described Warhol as the "bellwether of the art market."

[30] Which of the following is NOT related to Warhol?
① picture drawer ② food manufacturer
③ movie director ④ music producer

[31] Which of the following is NOT true about Warhol?
① The main field of his activities was pop art.
② He initially had a conformist stance.
③ He made friends with various kinds of people.
④ Many pop artists still pay respect to him.

[32] Which of the following is NOT Warhol's work?
① *Interview* ② The Velvet Underground
③ *The Economist* ④ *Silver Car Crash*

[33-35] Read the following passage and answer the questions. (각 2점)
What's small, buzzes here and there, and visits flowers?

If you said bees or hummingbirds, you got it. And you wouldn't be the first if you mixed the two up. In Medieval Europe, some called bees the smallest birds. In Chinese and Korean, the words for hummingbird translate into "(A) bird." Today we call the smallest hummingbird--weighing less than a penny and only a bit larger than the biggest bee--the (A) hummingbird.

And now a group of researchers say we should embrace our history of lumping the two together. The way scientists study bees could help them study hummingbird behavior, too, they argue in a review published in *Biology Letters*.

Scientists first compared the two back in the 1970s when studying how animals forage. The idea is that animals use a kind of internal math to make choices in order to minimize the work it takes to earn maximum rewards. Researchers at the time focused on movement rules, like the order in which they visited flowers, and where flowers were located relative to others. It was "almost like an algorithm" for efficient foraging, said David Pritchard, a biologist at the University of St. Andrews in Scotland who led the review. Hummingbirds and bees had similar solutions.

But the study of optimal foraging, as it was called, overlooked what animals learned about their environments. Bees decipher which flowers are more rewarding than others. They learn about color and how to manipulate a flower among other information. Decades before the concept of optimal foraging, Frank Bené, an American ornithologist, discovered that hummingbirds learned about color too, contrary to the belief that they were innately attracted to red. Hummingbirds also remembered locations of feeders that he moved in his garden.

As the field of animal cognition emerged, hummingbird and bee research diverged. Neuroscientists and behavioral ecologists developed ways to study bee behavior in naturalistic settings. Hummingbird researchers compared hummingbirds to other birds and borrowed methods from psychology to study their capacity to learn in the lab.

[33] Which of the following best fits in (A)?
① bee ② mini ③ penny ④ special

[34] Which of the following is the topic?
① research methods of animals
② study of animal cognition
③ optimal foraging of animals
④ commonalities of bees and hummingbirds

[35] Which of the following is true?
① Hummingbirds can only see red.
② Hummingbirds are actually a kind of a bee.
③ Bees know which flowers contain more honey.
④ Bees approach flowers more effectively than hummingbirds do.

[36-38] Read the following passage and answer the questions. (각 2.5점)
Exercise could help to make your fat tissue healthier, which is a good thing. According to a new study, a single session of exercise may change the molecular workings of fat tissue in ways that, over time, should improve metabolic health.

This finding has particular relevance during the holidays, when so many of us add to our fat stores. Exercise might make these annual experiences less metabolically damaging than otherwise.

Most of us probably think of our fat tissue as inert and undesirable. But our fat is, in fact, a busy and necessary tissue, producing and sending out multiple biochemical signals that affect biological operations throughout the body.

Fat tissue's most important responsibility, however, is to securely store fat, and we should hope that it performs this function well. Provocative recent research has found that, if a fat tissue is relatively leaky, allowing fatty acids to drain into the bloodstream, those fat elements can accumulate in other tissues, particularly the muscles and liver. Once there, they contribute to the development of insulin resistance, a serious metabolic condition that often leads to diabetes.

In a study published earlier this year, for instance, scientists from the University of Michigan and elsewhere found that if overweight men and women had low levels of fatty acids in their bloodstream, they also were metabolically healthier than (A) <u>other overweight adults</u>.

Even more interesting, they generally also had healthy fat, with biopsies* showing less inflammation and scarring than in the fat from other overweight men and women. Presumably, the scientists speculated, this healthy fat was leaking less than the weaker (B) <u>variety</u>.

But that study did not examine why some people had healthier fat than others and whether the condition of anyone's fat tissue might be changed. So for the new study, the same group of scientists began to consider exercise.

Exercise, of course, is well known to affect the amount of fat we store, since muscles use fatty acids as fuel. Exercise also is believed to prompt small amounts of white fat to transform into brown fat, a particularly desirable form of fat that burns a lot of calories.

*biopsy: 생체조직검사

[36] Which of the following best describes (A)?
① overweight adults with better metabolism
② overweight adults who are engaged in exercise
③ overweight adults who are not engaged in exercise
④ overweight adults with high levels of fatty acids in their bloodstream

[37] Which of the following best replaces (B)?
① adults ② bloodstream ③ fat ④ inflammation

[38] Which of the following is NOT true?
① Fat tissue is essential for our body.
② Leaky fat tissue may be linked to diabetes.
③ A single session of exercise may contribute to healthier life.
④ White fat is more desirable than brown fat in burning calories.

[39-41] Read the following passage and answer the questions. (각 2.5점)
Ponderosa pine* forests in the American West will die at an increasing rate as the world grows warmer, becoming less

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and less resilient when they are weakened by higher temperatures, according to new projections.

Although these forests now withstand short droughts, warming temperatures increasingly stress the forests, which means they will no longer survive the shorter droughts they once endured. And future droughts will be hotter as the planet warms.

"We're saying that if the climate warms a little more, things don't get (A) different, they get (B) different," said Henry Adams, a plant biologist at Oklahoma State University and lead author of a new paper, "Focus on Tree Mortality in a Warming World," published in *Environmental Research Letters*. "You get an acceleration in the rate of mortality."

"Long droughts are what it takes to kill trees," Dr. Adams said. "As you crank up the heat though, the time it takes to kill trees is less and less."

This study is significant because rather than looking at the effects of a single temperature increase, it examines the effects of multiple increases that provide a more realistic forecast.

"The confidence we've developed about our forests being at great risk is really high now," said David D. Breshears, a professor of natural resources at the University of Arizona and co-author of the paper. "Warming makes droughts more lethal."

Dr. Breshears said that the research shows that warming temperatures and drought alone could cause 9 or 10 additional forest die-offs during this century by killing seedlings. "It's not sustainable if you knock out a forest every ten or twelve years," Dr. Breshears said. "We are at a big risk of losing lots and lots of forest." The researchers also say that they believe the results of this study apply to many other types of forests around the world.

Such die-offs can lead to a state change, a radical shift in which the forest disappears and becomes a different type of (C), perhaps a grassland or shrub land.

*ponderosa pine: 소나무의 일종

[39] Which of the following sets best fits in (A) and (B)?
① very - a little ② a little - very
③ partially - totally ④ totally - partially

[40] Which of the following best fits in (C)?
① ecosystem ② forest ③ geography ④ shift

[41] Which of the following is true?
① A ponderosa pine forest disappears every year.
② Dr. Breshears has high confidence in the sustainability of forests.
③ Warming and droughts are destructive combination for forest loss.
④ Drought alone could cause 9 or 10 additional deforestation during this century.

[42-43] Read the following passage and answer the questions. (각 2.5점)

Some people may not even notice the switch. Others may already be hoarding their favorite bulbs and dreading the day when their final filament burns out and they must choose a replacement from a dizzying array of unfamiliar options. Lumens and watts? Light emitting diodes (LEDs) and compact fluorescent lamps (CFLs)? Soft white and warm white? What's the difference?

Perhaps it is not terribly surprising that so many people have clung to the warm, comforting glow they are used to. The cheap, spiral fluorescent bulbs that conservationists and utilities have pushed on consumers in recent years as money-saving replacements are shoddy imitations that cast a sick glow on faces and homes.

Given that, it's entirely understandable that people might now fear that the new efficiency standards will doom us to a future of harsh glare and eye strain caused by mercury-filled bulbs that are deemed so toxic you can't even toss them in the regular trash. What's the point of saving a few bucks on your electric bill or cutting your energy usage when you've lost the will to live?

Here's a bit of good news: those early energy-saving CFLs will probably go the way of the incandescent. According to people in the lighting industry, the future is all about LEDs, which have the potential to produce colors and shades that we may someday love as much as we loved the incandescent. Manufacturers have made progress with LEDs in the last few years so that they not only cost less, but you can turn down the (A) and turn up the warm, incandescent-esque (B). They also use a lot less energy than incandescent bulbs and can collectively save consumers billions of dollars a year. One bulb can last as long as 20 years.

The Natural Resources Defense Council estimates that the upcoming light bulb switch will reduce carbon emissions by tens of millions of tons every year. In the fight against climate change, this is the right thing to do. Nevertheless, it is a little sad to see the incandescent light bulb, a reliable workhorse that has served humanity so well and so long, relegated to the dustbin of obsolete technology.

[42] Which of the following is NOT true?
① Light bulb switch is on the right track.
② Currently people prefer LEDs.
③ Future LEDs could be warm.
④ LEDs and CFLs are different.

[43] Which of the following sets best fits in (A) and (B)?
① glare - radiance ② shape - color
③ watts - light ④ mercury - glow

[44-45] Read the following passage and answer the questions. (각 2.5점)

A diet of fiber-rich foods, such as fruits and vegetables, reduces the risk of developing diabetes, heart disease and arthritis. Indeed, the evidence for fiber's benefits extends beyond any particular ailment: people who eat more of it simply have lower odds of dying. That's why experts are always saying how good dietary fiber is for us. But while the benefits are clear, it's not so clear why fiber is so great. "It's an easy question to ask and a hard one to really answer," said Fredrik Bäckhed, a biologist. He and other scientists are running experiments that are yielding some important new clues about fiber's role in human health. Their research indicates that fiber does not deliver many of its benefits directly to our bodies. Instead, the fiber we eat feeds billions of (A) in our guts. Keeping them happy means our intestines and immune systems remain in good working order.

In order to digest food, we need to bathe it in enzymes that break down its molecules. Those molecular fragments then pass through the gut wall and are absorbed in our intestines. But our bodies make a limited range of enzymes, so that we cannot break down many of the tough compounds in plants. The term "dietary fiber" refers to those indigestible molecules. But they are indigestible only to us. The gut is coated with a layer of mucus, atop which sits a carpet of hundreds of species of (A), part of the human microbiome. Some of these microbes carry the enzymes needed to break down various kinds of dietary fiber. The ability of these bacteria to survive on fiber we can't digest ourselves has led many experts to wonder if the microbes are somehow involved in the benefits of the fruits-and-vegetables diet. Two detailed studies published recently in the journal *Cell Host and Microbe* provide compelling evidence that the answer is yes.

One way that fiber benefits health is by giving us, indirectly, another source of food, Dr. Gewirtz, a scientist, said. Once bacteria are done harvesting the energy in dietary fiber, they cast off the fragments as waste. That waste--in the form of short-chain fatty acids--is absorbed by intestinal cells, which use it as fuel.

[44] Which of the following would be best for the title?
① Dietary Fiber Is Good for Health
② Scientists Explain Immune System
③ Molecules Are Crucial to Biology
④ The Role of Enzymes Is Complex

[45] Which of the following best fits in (A)?
① mitochondria ② cells ③ bacteria ④ ingredients

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[46-48] Read the following passage and answer the questions. (각 4점)

Since the dawn of the 20th century, the philosophy of Nietzsche has had great intellectual and political influence around the world. Nietzsche applied himself to such topics as morality, religion, epistemology, psychology, ontology, and social criticism. Because of Nietzsche's evocative style and his often outrageous claims, his philosophy generates passionate reactions running from love to disgust. Nietzsche noted in his autobiographical *Ecce Homo* that his philosophy developed over time, so interpreters have found it difficult to relate concepts central to one work to those central to another, for example, the thought of the eternal recurrence features heavily in *Also Sprach Zarathustra* (*Thus Spoke Zarathustra*), but is almost entirely absent from his next book, *Beyond Good and Evil*. Added to this challenge is the fact that Nietzsche did not seem concerned to develop his thought into a system, even going so far as to disparage the attempt in *Beyond Good and Evil*.

Nietzsche saw nihilism as the outcome of repeated frustrations in the search for meaning. He diagnosed nihilism as a latent presence within the very foundations of European culture, and saw it as a necessary and approaching destiny. The religious worldview had already suffered a number of challenges from contrary perspectives grounded in philosophical skepticism, and in modern science's evolutionary and heliocentric theory. Nietzsche saw this intellectual condition as a new challenge to European culture, which had extended itself beyond a sort of point-of-no-return. Nietzsche conceptualizes this with the famous statement "God is dead," which first appeared in his work in section 108 of *The Gay Science*, again in section 125 with the parable of "The Madman," and even more famously in *Thus Spoke Zarathustra*. The statement, typically placed in quotation marks, accentuated the crisis that Nietzsche argued that Western culture must face and transcend in the wake of the irreparable dissolution of its traditional foundations, moored largely in classical Greek philosophy and Christianity. In aphorisms 55 and 56 of *Beyond Good and Evil*, Nietzsche talks about the ladder of religious cruelty that suggests how Nihilism emerged from the intellectual conscience of Christianity. Nihilism is sacrificing the meaning "God" brings into our lives, for "matter and motion," physics, "objective truth." In aphorism 56, he explains how to emerge from the utter meaninglessness of life by reaffirming it through the Nietzsche's ideal of Eternal Return.

[46] Which of the following would be best for the title?
① Nietzsche's Influence on Modern Intellectuals
② The Search for Central Concepts in Nietzsche
③ Classical Greek Philosophy As the Cause of Nihilism
④ Religious Cruelty in Traditional Christianity

[47] Which of the following is NOT what makes it hard to interpret Nietzsche's works?
① provocative and outrageous style
② development of ideas over time
③ lack of a central idea in his works
④ his own attitude to do away systematic thoughts

[48] Which of the following is NOT true?
① Nihilism resulted from the failure of the search for meaning.
② The traditional religious worldview was supported by modern science.
③ Conscientious Christians caused the emergence of nihilism.
④ The ideal of Eternal Return was proposed as a cure for nihilism.

[49-50] Read the following passage and answer the questions. (각 4점)

The central thesis of *Capital in the Twenty-first Century* by Thomas Piketty is that inequality is not an accident, but rather a feature of capitalism, and can only be reversed through state interventionism. The book thus argues that, unless capitalism is reformed, the very democratic order will be threatened.

Piketty bases his argument on a formula that relates the rate of return on capital (r) to economic growth (g), where r includes profits, dividends, interest, rents and other income from capital and g is measured in income or output. He argues that when the rate of growth is low, then wealth tends to accumulate more quickly from r than from labor and tends to accumulate more among the top 10% and 1%, increasing inequality. Thus the fundamental force for divergence and greater wealth inequality can be summed up in the inequality $r > g$. He analyzes inheritance from the perspective of the same formula.

The book argues that there was a trend towards higher inequality which was reversed between 1930 and 1975 due to unique circumstances: the two world wars, the Great Depression and a debt-fueled recession destroyed much wealth, particularly that owned by the elite. These events prompted governments to undertake steps towards redistributing income, especially in the post-World War II period. The fast, worldwide economic growth of that time began to reduce the importance of inherited wealth in the global economy.

The book argues that the world today is returning towards "patrimonial capitalism," in which much of the economy is dominated by inherited wealth: the power of this economic class is increasing, threatening to create an oligarchy. Piketty cites novels by Honoré de Balzac, Jane Austen and Henry James to describe the rigid class structure based on accumulated capital that existed in England and France in the early 1800s.

Piketty proposes that a progressive annual global wealth tax of up to 2%, combined with a progressive income tax reaching as high as 80%, would reduce inequality, although he concedes that such a tax "would be politically impossible."

[49] Which of the following is NOT true?
① Inequality is an inevitable part of capitalism.
② The lower the rate of growth, the more the income of the rich.
③ Oligarchy presupposes the absence of inherited money.
④ Annual global wealth tax could help to reduce inequality.

[50] Which of the following is NOT Piketty's suggestion?
① state's intervention ② reformation of capitalism
③ progressive income tax ④ patrimonial capitalism

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