

**ALL answers must be indicated on the MARK SHEET.**

**I Read the following passage, and answer the questions below.**

① On the lower left-hand corner of my desk sits a wooden box, roughly the size and shape of a smallish jewelry case and featureless save for a small metal switch on its uppermost surface. From time to time over the course of my workday, I reach out to flick this switch, and a hatch opens at the top of the box, and a small fingerlike projection, driven by a <sup>1</sup>whirring motor within, emerges and pushes the switch back into its original position. Having been switched on, this machine has now fulfilled its sole function of switching itself off again.

② This device — which is known as the Useless Machine, and more rarely as the Leave Me Alone Box — was conceived at Bell Laboratories in the early 1950s by the computer scientist Marvin Minsky, a pioneer in the field of artificial intelligence, who was at that point a grad student working a summer job. The first working model was constructed by his mentor, Claude Shannon, who later became known as the father of information theory. This context, the fact that the creators of this aggressively pointless gadget are emblematic figures in the ascendancy of machines over our contemporary world, lends a frisson of historical oddity to what is essentially <sup>2</sup>an executive toy.

③ I developed an affection for this machine — first for the idea of it, and then, having bought one on eBay, the reality — while writing a book about transhumanism, a movement that, among other things, advocates the merger of our bodies with our technologies. Part of the experience of writing the book, of spending time with transhumanists and engaging with their mechanistic ideas about human nature, was an uneasy grappling with the notion that we humans were already biological machines, and that we were destined to be superseded by technologies more sophisticated than ourselves. I was haunted by Minsky's own infamous <sup>3</sup>claim that the human brain “is just a computer that happens to be made out of meat” — an idea as hard to refute as it was unpleasant to think about — and by his insistence that our creations would one day be smarter than we are. Despite being a product of Minsky's strange and fertile imagination, the Useless Machine seemed to me to run counter to this narrative of absolute automation; it <sup>4</sup>seemed to react to the idea by switching itself off.

④ There is something charming, and even inspiring, in the paradoxical efficiency of this machine that does nothing, that fulfills its entire purpose by bluntly refusing <sup>5</sup>to fulfill any purpose at all. When I reach over to flick the switch on my Useless Machine and then watch it rouse itself, with patient defiance, to switch itself off again, I wonder whether this is what it might mean for a technology <sup>6</sup>to be truly intelligent: to receive an order and to respond by politely but firmly declining to follow it. The plain contradiction here, of course, is that in refusing to do what it's told, the machine is stoically following its explicit commands. In this sense, the Useless Machine is like a battery-operated koan: a playfully profound riddle on the relationship between humans and technology, and on the nature of intelligence.

⑤ To watch it switch itself off is to experience something strangely human. Arthur C. Clarke, who encountered Shannon's prototype of the machine during a visit to Bell Labs in the 50s, claimed to be disturbed by this spectacle. “The psychological effect, if you do not know what to expect,” he wrote, “is devastating. There is something unspeakably sinister about a machine that does nothing — absolutely nothing — except switch itself off.” <sup>7</sup>

⑥ There is, I agree, a certain uncanniness to the device, but I see nothing sinister about its refusal to be told what to do. We get the <sup>8</sup>word “robot” from the Czech word *robota*, which means “forced labor.” The robot has no choice in the matter of what work it does or whether it does it: It submits, by definition, to the will of its owner. As such, the dream of total automation represents a fulfillment of the logic of technocapitalism: a fusion of the labor force with the means of production, and the absolute ownership of both. Advance flickerings of this vision can be glimpsed on the horizon in the form of Uber's plans to replace its <sup>9</sup>“driver-partners” with self-driving cars, and Amazon's testing of stock-picker robots and delivery drones.

⑦ The Useless Machine will have no part of this vision; it point-blank refuses to be a robot. And I find it impossible not to admire this defiant self-possession. When I flick its switch and watch the machine flick

it back again—a process that often escalates into a kind of mechanical slapstick—I think of the enigmatic noncompliance of the eponymous legal clerk in Herman Melville’s “Bartleby, the Scrivener.” I give the machine its instructions, knowing full well what its courteously unyielding response will be: “I would prefer not to.” And this is why I regard it with such a mixture of affection and reverence: It is mesmerizing, this machine, in its puzzling and serene resistance. It’s a device that gives nothing and wants nothing: nothing, that is, but to be left alone. Minsky and Shannon themselves referred to the device as the Ultimate Machine—a name that didn’t stick, but which reveals something of the ironic self-enclosure of their invention. It’s a device, in this sense, of ultimate and perfect uselessness.

[Adapted from Mark O’Connell, “The Useless Machine,”  
*The New York Times Magazine*, September 4, 2016.]

(1) Choose the best way to complete these sentences about paragraphs ① to ⑦.

- |                             |                             |
|-----------------------------|-----------------------------|
| 1 In paragraph ① the writer | 2 In paragraph ② the writer |
| 3 In paragraph ③ the writer | 4 In paragraph ④ the writer |
| 5 In paragraph ⑤ the writer | 6 In paragraph ⑥ the writer |
| 7 In paragraph ⑦ the writer |                             |

- A claims that the device is a metaphor for complete subjugation to ownership, through an amalgamation of labor and machinery.
- B describes a device with no distinguishing features except for a small switch.
- C explains that he developed a fondness for the device, because he perceived it to be expressing a quiet rebellion against the relentless march of technology.
- D expresses respect for the machine’s comically self-referential nature.
- E points out that the machine resembles bureaucratic mechanisms that act simply to preserve themselves, serving no higher function beyond their own operation.
- F recounts the invention of the Useless Machine.
- G relates the emotional impact of observing the machine in action.
- H shows that the device is a metaphor for individual freedom and the responsibility to create meaning.
- I states that the device, in its paradoxical act of doing nothing, becomes a profound reflection on the nature of machine intelligence.

(2) Choose the best way to complete each of these sentences, which refer to the underlined words in the passage.

1 Here flick means

A clip.

D open up.

B flip.

E twist.

C movie.

2 Here ascendancy means

A ancestor.

D dominance.

B aspiration.

E evilness.

C climb.

3 Here superseded means

A controlled.

D supervised.

B enriched.

E suppressed.

C replaced.

4 Here narrative means

A comment.

D speech.

B folktale.

E story.

C recital.

5 Here paradoxical means

A accepted.

D ironic.

B anticipated.

E principled.

C contradictory.

6 Here defiance means

A command.

D insistence.

B defeat.

E resistance.

C ignorance.

7 Here sinister means

A critical.

D laughable.

B frightening.

E sinful.

C idiotic.

8 Here uncanniness means

A admiration.

D silliness.

B attachment.

E spookiness.

C seriousness.

9 Here flickerings means

A blazing.

D fluttering.

B burning.

E foreshadowing.

C glowing.

10 Here puzzling means

A composable.

D stubborn.

B intelligent.

E unmistakable.

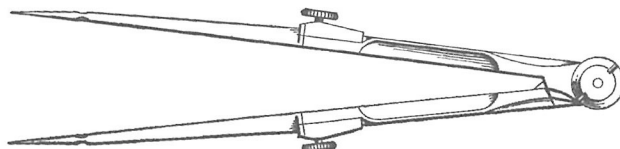
C mysterious.

(3) Choose the **FOUR** statements below that do **NOT AGREE** with what is written in the passage. You must **NOT** choose more than **FOUR** statements.

- A A robot, by definition, always follows the instructions that it is given.
- B The author admires the human-like nature of the pointless gadget.
- C The logic of techno-capitalism was originally conceived of, and advocated for, by scholars at Bell Laboratories in the 1950s.
- D The Useless Machine and the legal clerk in Herman Melville's story do not comply with the usual narrative of absolute automation.
- E The Useless Machine is actually a sophisticated computer that responds to various commands.
- F The Useless Machine represents an example of unavoidable programming errors, no matter how well designed by a competent engineer.
- G The Useless Machine was thought up by Marvin Minsky, but actually built by Claude Shannon.
- H Transhumanism, according to the author, is actually a warning about losing our humanity, which is based on our close connection with the natural environment.

## II Read the following passage, and answer the questions below.

① To introduce a first category of fractals,\* namely curves whose fractal dimension is greater than 1, consider a stretch of coastline. It is evident that its length is at least equal to the distance measured along a straight line between its beginning and its end. However, the typical coastline is irregular and winding, and there is no question it is much longer than the straight line between its end points. There are various ways of evaluating its length more accurately. In fact, coastline length turns out to be an elusive notion that slips between the fingers of one who wants to grasp it. All measurement methods ultimately lead to the conclusion that the typical coastline's length is very large and so poorly determined that it is best considered infinite. Hence, if one wishes to compare different coastlines from the viewpoint of their "extent," length is an inadequate concept.



A pair of dividers. [From International Correspondence School, *A Textbook on Ornamental Design* (1901).]

② METHOD A: Set dividers to a certain opening  $\epsilon$ , to be called the *yardstick length*, and walk these dividers along the coastline, each new step starting where the previous step leaves off. The number of steps multiplied by  $\epsilon$  is an approximate length  $L(\epsilon)$ . As the dividers' opening becomes smaller and smaller, and as we repeat the operation, we have been taught to expect  $L(\epsilon)$  to settle rapidly to a well-defined value called the true length. But in fact what we expect does not happen. In the typical case, the observed  $L(\epsilon)$  tends to increase without limit. The reason for this behavior is obvious: When a bay or peninsula noticed on a map scaled to 1/100,000 is reexamined on a map at 1/10,000, subbays and subpeninsulas become visible. On a 1/1,000 scale map, subsubbays and subsubpeninsulas appear, and so forth. Each time we zoom in adds to the measured length. Therefore, METHOD A replaces the coastline by a sequence of broken lines made of straight intervals, which we know how to calculate.

③ METHOD B: Such "smoothing out" can also be accomplished in other ways. Imagine a man walking along the coastline, taking the shortest path that stays no farther from the water than the set distance  $\epsilon$ . Then he repeats his walk after reducing his yardstick, then again, after another reduction; and so on, until  $\epsilon$  reaches, say, 50 cm. Man is too big and clumsy to follow any finer detail. One may further argue that this unreachable fine detail (a) is of no direct interest to Man and (b) varies with the seasons and the tides so much that it is altogether meaningless. We can neutralize argument (b) by restricting our attention to a rocky coastline observed when the tide is low and the waves are negligible. In principle, Man could follow such a curve down to finer details by harnessing a mouse, then an ant, and so forth. Again, as our walker stays increasingly closer to the coastline, the distance to be covered continues to increase with no limit.

④ METHOD C: An asymmetry between land and water is implied in METHOD B. To avoid this, one could view the coastline with an out-of-focus camera that transforms every point into a circular spot of radius  $\epsilon$ . In other words, we consider all the points of both land and water for which the distance to the coastline is no more than  $\epsilon$ . These points form a kind of sausage or tape of width  $2\epsilon$ . Measure the area of the tape and divide it by  $2\epsilon$ . If the coastline were straight, the tape would be a rectangle, and the above quotient would be the actual length. With actual coastlines, we have an estimated length  $L(\epsilon)$ . As  $\epsilon$  decreases, this estimate again increases without limit.

⑤ METHOD D: Imagine a map drawn in the manner of pointillist painters using circular spots of radius  $\epsilon$ . Instead of using circles centered on the coastline, as in METHOD C, let us require that the spots that cover the entire coastline be as few in number as possible. As a result, they may well lie mostly inland near the capes and mostly in the sea near the bays. Such a map's area, divided by  $2\epsilon$ , is an estimate of the length. This estimate also "misbehaves."

⑥ To summarize, the main finding is always the same. As  $\epsilon$  is made smaller and smaller, every approximate length tends to increase steadily without bound. In order to ascertain the meaning of this result, let us perform analogous measurements on a standard curve from Euclid. For an interval of a straight line, the approximate measurements are essentially identical and define the length. For a circle, the approximate measurements increase but converge rapidly to a limit. The curves for which a length is thus defined are called “*rectifiable*.”

⑦ An even more interesting contrast is provided by the results of measurement on a coastline that Man has tamed, say the coast at Chelsea, England, as it is today. Since very large features are unaffected by Man, a very large yardstick again yields results that increase as  $\epsilon$  decreases. However, there is an intermediate zone of  $\epsilon$ 's in which  $L(\epsilon)$  varies little. This zone may go from 20 meters down to 20 centimeters. But increases again after  $\epsilon$  becomes less than 20 centimeters and measurements become affected by the irregularity of the stones. Thus, if we trace the curves representing  $L(\epsilon)$  as a function of  $\epsilon$ , there is little doubt that in this range the length exhibits a flat portion that was not observable before the coast was tamed. Measurements made in this zone are obviously of great practical use. Since boundaries between different scientific disciplines are largely a matter of conventional division of labor between scientists, one might restrict geography to phenomena above Man's reach, for example, on scales above 20 meters. This restriction would yield a well-defined value of geographical length. The US Coast Guard may well choose to use the same  $\epsilon$  for untamed coasts, and encyclopedias and almanacs could adopt the corresponding  $L(\epsilon)$ .

⑧ However, the adoption of the same  $\epsilon$  by all the agencies of a government is hard to imagine, and its adoption by all countries is all but inconceivable. Another reason against deciding on an arbitrary  $\epsilon$  is philosophical and scientific. Nature does exist apart from Man, and anyone who gives too much weight to any specific  $\epsilon$  and  $L(\epsilon)$  lets the study of Nature be dominated by Man, either through his typical yardstick size or his highly variable technical reach. If coastlines are ever to become an object of scientific inquiry, the uncertainty concerning their lengths cannot be legislated away. In one manner or another, the concept of geographic length is not as inoffensive as it seems. It is not entirely “objective.” The observer inevitably intervenes in its definition.

\**Fractals* are a type of geometric object that repeats its properties through magnification or minification, showing self-similarity on all scales.

[Adapted from Benoit B. Mandelbrot, *The Fractal Geometry of Nature* (1977).]

(1) Choose the best way to complete these sentences about paragraphs ① to ⑧.

1 In paragraph ① the writer	2 In paragraph ② the writer
3 In paragraph ③ the writer	4 In paragraph ④ the writer
5 In paragraph ⑤ the writer	6 In paragraph ⑥ the writer
7 In paragraph ⑦ the writer	8 In paragraph ⑧ the writer

- A argues that there are two reasons for not simply deciding on a randomly chosen length for  $\epsilon$ .
- B claims that there is an intermediate range for values of  $\epsilon$  over which values for  $L(\epsilon)$  are relatively stable.
- C compares the measurements of the length of a coastline with those of well-established curves.
- D considers all the points of either the land or the sea at a distance not greater than  $\epsilon$  from the coastline.
- E defines  $\epsilon$  as the radius of the least number of circles that will cover the coastline.
- F designates  $\epsilon$  as the greatest linear distance inland from the water.
- G divides the coastline into a sequence of broken lines of length  $\epsilon$ .
- H explains that using smaller agents, like ants, would likely yield a stable  $L(\epsilon)$  for all values of  $\epsilon$ .
- I points out that length is too vague a concept for comparing the span of various coastlines.
- J states that a coastline is infinitely long.

(2) Choose the FOUR statements below that AGREE with what is written in the passage.

**You must NOT choose more than FOUR statements.**

- A All four measurement methods suggest that the length of a typical coastline is very large and ill-defined, possibly best considered infinite.
- B Coastlines are examples of a type of curve whose fractal dimension is greater than 1.
- C Coastlines that have been tamed by humans, such as the English coast at Chelsea, have a fixed length that holds true at all measurement scales.
- D Curves for which length is clearly defined by some convergence method of measurement are called rectifiable.
- E In one of the methods for measuring the coastline, a man walks directly along the water's edge, touching the water at all times.
- F In one of the methods for measuring the coastline, dividers are used to draw circles in the ocean near the coastline.
- G The coastline of Britain is measured to be 10,000 kilometers using METHOD B with yardstick  $\epsilon$  set to 50 centimeters.
- H The concept of geographic length cannot be objectively and uniquely defined.
- I Worldwide, government agencies have tamed the coastlines by agreeing on a single yardstick  $\epsilon$  for measurement.

(3) From the words in the box below, choose the most appropriate one to complete the following four sentences. You must NOT choose any of the words more than ONCE.

- 1 A/an \_\_\_\_\_ finding across all four methods is that approximate length  $L(\epsilon)$  steadily increases without bound as the yardstick  $\epsilon$  is made smaller.
- 2 It is \_\_\_\_\_ to imagine that all countries would adopt the same yardstick  $\epsilon$  in measuring coastlines.
- 3 METHOD A measures approximate length  $L(\epsilon)$  by walking dividers of a/an \_\_\_\_\_ opening  $\epsilon$  along the coastline.
- 4 Using length to compare the extent of different coastlines is a/an \_\_\_\_\_ concept.

A consistent	B definite	C far-fetched
D incomplete	E useful	

(4) From the words in the box below, choose the most appropriate one to complete the following four sentences. You must NOT choose any of the words more than ONCE.

- 1 Defining geographical length is not fully objective because the observer's chosen method of measurement inevitably \_\_\_\_\_ the result.
- 2 The concept of rectifiability \_\_\_\_\_ standard Euclidean curves, whose measured length converges, from the fractal geometry of coastlines.
- 3 The precise measurement of a typical coastline's length \_\_\_\_\_ definition, and is an elusive notion.
- 4 The measurement of a coastline does not arrive at a stable limit as the yardstick \_\_\_\_\_ .

A affects	B differentiates	C diminishes
D elucidates	E evades	

### III Read the following passage, and answer the questions below.

① One of the major difficulties in reconstructing the activities of Tokugawa naturalists does not lie in understanding their conceptualizations of the objects they studied or the environment that contained them but rather in the semantic<sup>1</sup> intricacies of the English concept of nature itself. Raymond Williams defined “nature” as “perhaps the most complex word in the language.” Arthur O. Lovejoy equated the development of its meanings to the entire history of Western thought. Its semantic capacity<sup>2</sup> is staggering: I can call “nature” the environment that surrounds me, the incontrollable impulses inside me,<sup>3</sup> the laws that sustain physical reality, all that exists in a metaphysical sense, the inner essence of things, the concept of being, God, or all of the above at the same time.

② Even more intimidating is to reconstruct a history of the conceptions of nature in a non-Western cultural sphere like Japan, where a single concept with a semantic capacity equivalent to “nature” did not exist until the 1880s, when the Japanese *shizen* was adopted to translate the German *Natur*. In its place, a constellation of different terms—such as *tenchi* (heaven and earth), *sansui* (mountains and waters), *shinrabanshō* (all things in the universe), *banbutsu* (ten thousand things), *honzō* (the fundamental herbs), *yakusō* (medicinal herbs), *sanbutsu* (resources), and the like—were utilized to express different aspects of the environment, material reality, natural objects, and the laws that regulated them.

③ The semantic complexities of the English “nature” affect our understanding of those societies that did not develop an analogous concept. Words do not merely describe but also prescribe the world we live in. This is not simply a matter of semantic punctiliousness. Even today “nature” is constantly mobilized to justify the most varied beliefs and practices. From human rights, competitive instincts, and free-market liberalism to sexual orientations, family organization, national identity, and so on, political leaders, think tanks, and media “intellectuals” legitimate their own views on these fundamental issues by appealing to their *naturalness*—attempting, that is, to exclude them from becoming a matter of debate or criticism.

④ What I want to emphasize here is not the *lack* of a term equivalent to “nature” in traditional East Asia but rather its semantic and ideological *excesses*. In fact, “nature,” while referring to the material, *physical* environment, also stands, often without us acknowledging it, for the *metaphysical* assumptions<sup>4</sup> that have been associated to it in the course of its history and are now an organic part of its meaning. When we say that something is “natural,” in other words, we conceive of it as existing independently from human will or as standing for what is normal, what cannot be otherwise than what it appears to be; saying that something (an event, an object) is natural is attributing to it a sense of originality and authenticity.

⑤ In early modern Japan, the terms expressing these connotations<sup>5</sup> of “nature” did not have any semantic affinity with those that referred to the material environment and its laws. That is why to me “nature” is in fact overloaded with meanings that surreptitiously summon each other up: physical, metaphysical, aesthetic, religious, cognitive, economic, ethical, and political. These meanings are not eternal or universal but historically situated and socially conditioned. Very often, appeals to “nature” have ideological overtones.

⑥ To address how ideologies influence humanity’s essential relationship with nature—to “democratize”<sup>6</sup> nature—we must then emancipate<sup>7</sup> ourselves from the mystifying power of “nature,” as I believe, with Theodor W. Adorno, that “people are themselves dominated by nature: by that hollow and questionable concept of nature.” “Nature” has acquired such an influential ideological force that some philosophers and social theorists have begun to defend an “ecology without nature.” In short, it seems that today “nature” must die so that the environment can live.

⑦ No single equivalent to the English “nature” is to be found in the texts of premodern and early modern East Asia. The Chinese *ziran* and the Japanese *shizen* are expressions adopted in the late nineteenth century to translate the English “nature” and the German *Natur*, but in the early modern period, they were mostly utilized as adjectives or adverbs—in Japan also read as *onozukara*—meaning “in itself,” “spontaneously.” Both Chinese and Japanese traditions, in fact, distinguished with different terms the various semantic spheres ambiguously encompassed by the English “nature.” “Human nature” (*sei*) was a Confucian concept with deep social,<sup>8</sup> ethical, and psychological implications that acquired metaphysical

connotation only in the later tradition of Zhu Xi's thought, starting from the late twelfth century. Song period Neo-Confucianism, blending together in a novel and creative way Daoist, Buddhist, and Confucian elements, developed a complex metaphysical system of logical and material principles that provided an explanation to various physical, social, and psychological phenomena. But there was no single term like "nature" that encompassed the ordered totality of the universe. Most importantly, there was no single term like "nature" that referred to the totality of material and phenomenal reality.

⑧ In Japan, *honzōgaku* scholars and Neo-Confucian thinkers often utilized the term *tenchi* (*tiandi* in Chinese) — sometimes pronounced as *ametsuchi* and literally meaning "sky (or heaven) and earth" — to indicate the whole material world of natural phenomena. More precisely, however, *tenchi* did not encompass a generative force moving and regulating the various phenomena, nor did it include the various natural objects and phenomena — trees, herbs, fish, insects, stars, or rain. Instead, *tenchi* merely indicated "what was above and below the unfolding of the myriads of things," as Itō Jinsai put it. It was metaphorically associated with the image of a "vessel" or "receptacle" for all natural phenomena.

⑨ Itō Jinsai gave one of the best definitions of *tenchi* in his book *Gomō jigi*. He described heaven and earth as the boundaries within which an immanent but distinct generative force, *ki*, acted as the enzyme moving matter in a logical and coherent way (*ri*) to produce all things in the universe. Therefore, while *tenchi* indicated the boundary that human cognition could not cross, it contained but not included all physical and metaphysical things that enabled human beings to grasp the logical working of the inner forces of *tenchi* — that is, *ki*, *ri*, *yin*, *yang*, the Five Phases (*wu xing* in Chinese, *gogyō* in Japanese: wood, fire, earth, metal, and water) constituting the building blocks of material reality, and the like — as they unfold in the concrete materiality of natural objects and phenomena.

\**Semantic* means related to meaning.

[Adapted from F. Marcon, *The Knowledge of Nature and the Nature of Knowledge in Early Modern Japan* (2015).]

(1) Which of the following sentences best describes the content of paragraphs ① to ⑨?

- |   |
|---|
| 1 Paragraph ① is best summarized by the following sentence: |
| 2 Paragraph ② is best summarized by the following sentence: |
| 3 Paragraph ③ is best summarized by the following sentence: |
| 4 Paragraph ④ is best summarized by the following sentence: |
| 5 Paragraph ⑤ is best summarized by the following sentence: |
| 6 Paragraph ⑥ is best summarized by the following sentence: |
| 7 Paragraph ⑦ is best summarized by the following sentence: |
| 8 Paragraph ⑧ is best summarized by the following sentence: |
| 9 Paragraph ⑨ is best summarized by the following sentence: |

- A According to Japanese thinkers, while *tenchi* represented a cognitive boundary, generative forces coherently operating within it guided by reason allowed humans to understand its fundamental principles.
- B Itō Jinsai saw *tenchi* as the active agent in the production of all things, directly responsible for generating material and metaphysical reality through forces like *ki* and *ri*.
- C Premodern and early modern East Asia lacked a single equivalent to the English “nature”; instead distinct terms for the various semantic spheres encompassed by “nature” were used, such as “human nature” and concepts explaining the universe.
- D Reconstructing historical conceptions of nature in premodern societies is challenging because there might be no single word analogous to “nature” as was the case in Japan until modern times.
- E The concept of naturalness is used in public debates to immunize certain topics from criticism or even to shield them from becoming the subject of debate in the first place.
- F The ideological implications of the concept of “nature” have become so strong, that we have to free ourselves from it to be able to develop a viable concept of the environment.
- G The main challenge in studying Tokugawa naturalists lies in their rejection of the concept of “nature,” as they considered it too complex for expressing the simplicity of the objects they studied.
- H The main problem in understanding different concepts of nature lies in the complex meanings of the English term “nature,” a term with a vast semantic range encompassing everything from the environment to metaphysical concepts.
- I Terms for the material environment do not have the same meaning as those implying the metaphysical, political or aesthetic aspects of “nature” in early modern Japan.
- J When we speak of nature, this often implies a sphere that is beyond the control of humans and is therefore unalterable and rooted in itself.
- K Whereas “nature” can encompass the meaning of a generative force, premodern Japanese thinkers used the word *tenchi*, which denoted a sort of container of all natural phenomena.

(2) Choose the **FOUR** statements that do **NOT AGREE** with what the passage says. You must **NOT choose more than FOUR statements.**

- A A future global environmental discourse requires not the universalization of Western terms like “nature” but a dialogue among diverse conceptual ecologies rooted in different languages and worldviews.
- B Even though “nature” mystifies our understanding of the environment, it can serve as a crucial cognitive tool that allows societies to conceptualize the environment as a coherent whole, enabling ecological awareness and environmental ethics.
- C Premodern Japan did not have a single term equivalent to “nature,” but rather used a variety of terms to express different aspects of the material world, environment, and metaphysical forces.
- D Premodern Japanese thinkers developed more nuanced and adaptable frameworks for understanding the environment than their Western counterparts, precisely because they did not reduce the complexity of the natural world to a single, abstract concept like “nature.”
- E The English concept of “nature” is semantically overloaded, encompassing a wide range of physical, metaphysical, ethical, and ideological meanings that complicate cross-cultural understanding.
- F The ideological richness of the Western concept of “nature” has historically enabled powerful narratives of moral order, human rights, and environmental protection, making it a productive and beneficial force for both cultural cohesion and political progress.
- G The notion of “nature” often functions ideologically, being used to justify social, political, and moral norms by framing them as natural and therefore beyond critique.
- H To engage critically with the environment and its representation, we must question and potentially move beyond the notion of “nature,” which obscures more than it reveals and can hinder ecological thinking.

(3) Choose the best way to complete these sentences, which refer to the underlined words in the passage.

1 Here conceptualizations means

- |                |               |                    |
|----------------|---------------|--------------------|
| A admirations. | B hypotheses. | C interpretations. |
| D methods.     | E rejections. |                    |

2 Here equated means

- |               |             |           |
|---------------|-------------|-----------|
| A contrasted. | B inserted. | C linked. |
| D opposed.    | E promoted. |           |

3 Here staggering means

- |                |               |            |
|----------------|---------------|------------|
| A astonishing. | B confusing.  | C limited. |
| D telling.     | E unexplored. |            |

4 Here material means

- |              |             |           |
|--------------|-------------|-----------|
| A external.  | B fabric.   | C matter. |
| D substance. | E tangible. |           |

5 Here connotations means

- |                  |                 |                |
|------------------|-----------------|----------------|
| A associations.  | B deficiencies. | C denotations. |
| D peculiarities. | E shortcomings. |                |

6 Here overtones means

- |                |                 |                  |
|----------------|-----------------|------------------|
| A foundations. | B implications. | C manipulations. |
| D reasons.     | E voices.       |                  |

7 Here emancipate means

- |              |             |             |
|--------------|-------------|-------------|
| A challenge. | B improve.  | C liberate. |
| D remind.    | E restrain. |             |

8 Here encompassed means

- |           |              |             |
|-----------|--------------|-------------|
| A barred. | B contained. | C directed. |
| D hidden. | E sealed.    |             |

9 Here totality means

- |              |             |             |
|--------------|-------------|-------------|
| A absolute.  | B divinity. | C entirety. |
| D integrity. | E mass.     |             |

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