1 次の英文を読み，設問に答えなさい。〔2024 九州大第 1 問〕

(1) ある種が、他の種を犠牲にして広い生息域を持ち、それゆえ、競合より環境にうまく適応し、生存競争でそれぞれの生物が直面する問題に対してより優れた解決能力を持っていること。

→ ・他の種を犠牲により広い生息地を持つ
・競争相手より高い環境適応力
・競争相手より高い 生存への競争の中でそれぞれの生き物が直面する問題への解決能力

In biology, we call a species (1)dominant when it obtains more living space at other species' expense, thus showing more adaptability to the environment than its competitors and a superior capacity to solve the problems faced by each living being in the struggle for survival. The more abundant a species is, the greater its relative weight within the ecosystem.

dominant

＜具体例＞

For instance, what would we say if we discovered that a faraway planet is 99 percent inhabited by a certain life form? We'd say the planet is dominated by that life form. Now let's come back to Earth. What do we say about our planet? That it is dominated by humans. Now, are we really sure that this thought, so reassuring in many ways, corresponds to reality? On Earth, 99.7 percent of the biomass, or the total mass of everything that is alive, isn't composed of humans, but of plants! The human species, together with all the other animals, represents a mere 0.3 percent.

We say

dominated by humans

「実は違う」

isn't dominated by humans, but by plants

(2)地球の総生物量の99.7%を植物が占め、人間は他の生物と合わせてもたった0.3%であるという状況。

＜因→果＞

Given (2)this state of things, our planet is certainly green; Earth is an ecosystem unmistakably dominated by plants. But how can that be? How could the stupidest and most passive beings on the planet have achieved this primacy? Obtaining greater space at the expense of other species indicates greater adaptability, that is, superior problem-solving ability. So why, of all living things, do animals make up only 0.3 percent, and why, of that 0.3 percent, do humans make up an even smaller percentage? Or, putting the question another way, how do we reconcile this fact with the completely human assumption that we are the dominant species, we can control the planet, and we have greater rights than other species? On planet Earth, is there really only 0.3 percent animal life compared to 99.7 percent plant life? Then plants are the dominant beings, while there are only trifling amounts of animals. There can be only one explanation: plants are much more advanced, adaptable, and intelligent beings than we're inclined to think.

尊厳破壊されてて草

やっと結論言いやがる！！！

Why is the word intelligence so disconcerting when used to refer to the plant world? Unlike animals, plants are stationary beings and live anchored to the soil (though not all do). To be able to survive in this condition, they have evolved ways of feeding themselves, reproducing, and defending themselves differently from animals, and they have constructed their bodies modularly* in order to cope with external attacks. Thanks to this structure, if an animal eats part of the leaves or the stem, it isn't a serious problem.

？ 合わない，気持ち悪い 的な？

答え

stable系か？

(3)脳や心臓など、傷ついたり失ったりすると生存が危ぶまれる個別の臓器を持たず、相互に機能し容易に組み替えられる細部の繰り返しで大部分が構成されているという特徴。

A plant doesn't have individual organs such as a brain, a heart, lungs, and one or more stomachs because, if it did, their injury or removal would threaten the entire organism's survival. In plants, no single part is essential; and, in fact, the structure is mostly made up of repeated modules that interact with one another and that in certain conditions can even survive autonomously. (3)These structural characteristics make plants very different from animals and more like a colony than an individual.

One consequence of their having a structure so different from ours is that plants seem very distant from us, alien, to the point that sometimes it's even hard for us to remember they're alive. The fact that we share with most animals a brain, a heart, one or more mouths, lungs, and stomachs makes them seem close and comprehensible. But with plants, it's completely different.

If plants don't have brains, can they not think? (4)The prejudice about plant intelligence comes from just this doubt: how can a certain function be carried out without an organ designed for it? Yet plants eat without a mouth, breathe without lungs. So why doubt that they can think? No one could deny that a plant feeds or breathes, so why is (V) solely the hypothesis that they think (S) persistently rejected (C)?

Note:
modularly*：容易に組み換えられる細部の集合として

問 1. 下線部(1)“dominant”の意味を，本文の内容に即して日本語で述べなさい。

問 2. 下線部(2)“this state of things”とはどのような状況のことか，日本語で述べなさい。

問 3. 下線部(3)“These structural characteristics”とはどのような特徴のことか, 日本語で述べなさい。

問 4. 下線部(4)“The prejudice about plant intelligence”に関して，一般の人が抱く「偏見」はどのようなものであると著者は述べているか，日本語で答えなさい。

問 5. 次のＡ～Ｅのうち，本文の内容に合致するものを一つ選び，記号で答えなさい。

F A. Earth’s dominant species is human beings.

F B. Animals avoid eating plants due to their fragile and vulnerable nature.

F C. Plants do not have a mouth, but they have a central nervous system. これってbrainじゃ？w

T D. The structure of plants, which is radically different from that of animals, makes some people forget that they are alive.

F E. The author of this essay seems to agree with the general view of plant intelligence which is shared by most people.

[2] 次の英文を読み，下の問いに答えなさい。〔2019 一橋大第 1 問〕

While conducting research on emotions and facial expressions in Papua New Guinea in 2015, psychologist Carlos Crivelli discovered something startling. He showed Trobriand Islanders* photographs of the standard Western face of fear — wide-eyed, mouth wide open — and asked them to (A) what they saw. The Trobrianders didn't see a frightened face. Instead, they saw an indication of threat and aggression. In other words, what we think of as a universal expression of fear isn't universal at all. But if Trobrianders have a different interpretation of facial expressions, what does that mean? One emerging — and increasingly supported — theory is that facial expressions don't reflect our feelings. (1)Instead of reliable displays of our emotional states, they show our [ ].

The face acts "like a road sign to affect the traffic that's going past it," says Alain Fridlund, psychology professor who wrote a recent study with Crivelli. "Our faces are ways we direct the course of a social interaction." That's not to say that we actively try to manipulate others with our facial expressions. Our smiles and frowns may well be unconscious. But (2)our expressions are less a mirror of what's going on inside than a signal we're sending about what we want to happen next. Your best 'disgusted' face, for example, might show that you're not happy with the way the conversation is going — and that you want it to take a different course.

While it may seem sensible, this theory has been a long time coming. The idea that emotions are fundamental, instinctive, and expressed in our faces is deeply fixed in Western culture. But (3)this viewpoint has always been criticized. New research is challenging two of the main points of basic emotion theory. First is the idea that some emotions are universally shared and recognized. Second is the belief that facial expressions are reliable reflections of those emotions.

That new research includes recent work by Crivelli. He has spent months living with the Trobrianders of Papua New Guinea as well as the Mwani of Mozambique*. With both native groups, he found that study participants did not (B) emotions to faces in the same way Westerners do. It was not just the face of fear, either. Shown a smiling face, only a small percentage of Trobrianders declared that the face was happy. About half of those who were asked to describe it in their own words called it "laughing": a word

that deals with action, not feeling. In other words, Crivelli found no evidence that what is behind a facial expression is universally understood.

Making matters more complicated, even when our facial expressions are interpreted by others as exhibiting a certain feeling, those people might (A) an emotion we're not actually experiencing. In a 2017 analysis of about 50 studies, researchers found that only a minority of people's faces reflected their actual feelings.

If our expressions don't actually reflect our feelings, there are enormous consequences. One is in the field of artificial intelligence (AI)*, specifically robotics. "A good number of people are training their artificial intelligence and their social robots using example faces from psychological textbooks," says Fridlund. But if someone who frowns at a robot is signaling something other than simple unhappiness, the AI may (C) to them incorrectly.

For most of us, though, the new research may have most of an effect on how we interpret social interactions. (4)It turns out that we might communicate better if we saw faces not as mirroring hidden emotions — but rather as actively trying to speak to us. People should read faces "kind of like a road sign," says Fridlund. "It's like a switch on a railroad track: do we go here or do we go there in the conversation?" That frown on your friend's face may not be actual anger, maybe she just wants you to agree with her point of view.

Take laughter, says Bridget Waller: "when you laugh and how you laugh within a social interaction is absolutely crucial." A poorly-timed laugh might not (D) your inner joy at what's going on — but it might show that you're not paying close attention to the conversation, or may even signal hostility.

For Crivelli, our faces may even be more calculating than that. He compares us to puppeteers*, with our expressions like "invisible wires or ropes that you are trying to use to manipulate the other." And, of course, that other person is manipulating us right back. We're social creatures, after all.

(BBC.com; *Why our facial expression don't reflect our feelings* Talya Rachel Meyers 11th May 2018 より)

注　Trobriand Islander トロブリアンド諸島の住民
the Mwani of Mozambique モザンビークのムワニ族
artificial intelligence (AI) 人工知能　　robotics ロボット工学
puppeteer 操り人形師

1　下線部(1)に続く空欄［　　］に入れる語句として最も適切なものを以下の選択肢イ～ニから一つ選びなさい。

イ　beliefs and moral values　　ロ　intentions and social goals

ハ　likes and dislikes　　ニ　opinion and level of intelligence

2　下線部(2)を和訳しなさい。

3　下線部(3)の指す内容を日本語で説明しなさい。

4　下線部(4)を和訳しなさい。

5　空欄(　A　)～(　D　)に入れる語として最も適切なものを，以下の選択肢イ～への中からそれぞれ一つずつ選びなさい。但し，各選択肢は1回のみ使用できるものとする。また，(　A　)は本文中に2度出てくるので注意すること。

イ　attribute　　ロ　examine　　ハ　explain
ニ　identify　　ホ　respond　　ヘ　reveal

3 次の英文を読み設問に答えなさい。〔2015 東京藝術大，音楽（学理）〕

For twenty years or so I gave a lecture introducing the fundamentals of virtual reality. I'd review the basics of vision and hearing as well as of touch and taste. At the end, the questions would begin, and one of the first ones was usually about smell: Will we have smells in virtual reality machines anytime soon?

Maybe, but probably just a few. Odors are fundamentally different from images or sounds. The latter can be broken down into primary components that are relatively straightforward for computers — and the brain — to process. The visible colors are merely words for different wavelengths of light. Every sound wave is actually composed of numerous sine waves, each of which can be easily described mathematically. In other words, both colors and sounds can be described with just a few numbers; a wide spectrum of colors and tones is described by the interpolations* between those numbers. The human retina* need be sensitive to only a few wavelengths, or colors, in order for our brains to process all the intermediate ones. Computer graphics work similarly: a screen of pixels, each capable of reproducing red, green, or blue, can produce nearly all the colors that the human eye can see. A music synthesizer can be thought of as generating a lot of sine waves, then layering them to create an array of sounds.

Odors are completely different, as is the brain's method of sensing them. Deep in the nasal* passage sits a patch of tissue studded with neurons* that detect chemicals. Each of these neurons has cup-shaped proteins called olfactory* receptors. (1)When a particular molecule happens to fall into a matching receptor, a signal is triggered that is transmitted to the brain as an odor. A molecule too large to fit into one of the receptors has no odor. The number of distinct odors is limited only by the number of olfactory receptors capable of interacting with them. It has been found that the human nose contains about one thousand different types of olfactory neurons, each type able to detect a particular set of chemicals.

This adds up to a profound difference in the underlying structure of the senses. There is no way to interpolate between two smell molecules. The world's smells can't be broken down into just a few numbers. Think of it this way: colors and sounds can be measured with rulers, but odors must be looked up in a dictionary. This is a shame, from the point of view of a virtual reality technologist. There are thousands of fundamental odors, far more than the handful of primary colors. Perhaps someday we will be able to wire

up a person's brain in order to create the illusion of smell, but it would take a lot of wires to address all those entries* in the mental smell dictionary.

For some years now, some neuroscientists have been working to understand this brain's "smell dictionary." The brain must also have some way of organizing all those odors. Keep in mind that smells are not patterns of energy, like images or sounds. (2)To smell an apple, you physically bring hundreds or thousands of apple molecules into your body. You don't smell the entire form; you steal a piece of it and look it up in your smell dictionary for the larger reference. A smell is a synecdoche, a part standing in for the whole. Consequently, smell requires additional input from the other senses. Context is everything: if you are blindfolded in a bathroom and a good French cheese is placed under your nose, your interpretation of the odor will likely be very different than it would be if you knew you were standing in a kitchen. Similarly, if you can see the cheese, you can be fairly confident that what you're smelling is cheese, even if you're in a restroom.

All of which has led me to wonder: Is there a relationship between olfaction and language, that famous product of the human cerebral cortex*? Maybe the dictionary analogy has a real physical basis. Olfaction, like language, is built up from entries in a catalog, not from infinitely morphable patterns. Moreover, the grammar of language is primarily a way of fitting those dictionary words into a larger context. Perhaps the grammar of language is rooted in the grammar of smell. Perhaps the way we use words reflects the deep structure of the way our brain processes chemical information. I plan to test this hypothesis by studying the mathematical properties that emerge during computer simulations of the neurology of olfaction.

*[Notes：
interpolation：a process of calculating the value of a function between the values already known
retina：a thin layer at the back of the eyeball　　nasal：of the nose
neurons：nerve cells　　olfactory：relating to the sense of smell
entry：each item in a list, such as an article in a dictionary
cerebral cortex：a grey part of the brain, responsible for language and thinking]

(問 1) 下線部(1), (2)を和訳しなさい。

(1)

(2)

(問 2) 二重下線部の文に表されている比喩表現の意味について，本文に即して説明しなさい。

(問 3) 知覚されたにおいを脳がどのような形で「解釈」しようとするのか，例を挙げて説明しなさい。

(問 4) 波線部の文の意味について，文脈に即して説明しなさい。

4 次の英文を読み，下の問いに答えなさい。〔2023 東北大第 1 問〕

'You can't code people, Millie. That's basically impossible.'

I was eleven, and arguing with my older sister. 'Then how do we all think?'

It was something I knew instinctively then, but would only come to understand properly years later: (A)the way we think as humans is not so different from how a computer program operates. Every one of you reading this is currently processing thoughts. Just like a computer algorithm, we ingest and respond to data, instructions, information and external stimuli. We sort that data, using it to make conscious and unconscious decisions. And we categorize it for later use, like directories within a computer, stored in order of priority. The human mind is an extraordinary processing machine, one whose awesome power is the distinguishing feature of our species.

We are all carrying a supercomputer around in our heads. But despite that, we get tripped up over everyday decisions. (Who hasn't agonized over what outfit to wear, how to phrase an email or what to have for lunch that day?) We say we don't know what to think, or that we are overwhelmed by the information and choices surrounding us.

That shouldn't really be the case when we have a machine as powerful as the brain at our disposal. If we want to improve how we make decisions, we need to make better use of the organ dedicated to doing just that.

Machines may be a poor substitute for the human brain—lacking its creativity, adaptability and emotional lens—but they can teach us a lot about how to think and make decisions more effectively. By studying the science of machine learning, we can understand the different ways to process information, and fine-tune our approach to decision making.

There are many different things computers can teach us about how to make decisions, which I will explore in this chapter. But there is also a singular, counter-intuitive lesson. To be better decision makers, we don't need to be more organized, structured or focused in how we approach and interpret information. You might expect machine learning to push us in that direction, but in fact the opposite is true. As I will explain, algorithms excel by their ability to be unstructured, to thrive *amid complexity and randomness and to respond effectively to changes in circumstance. (B)By contrast, ironically, it's we humans who tend to seek conformity and straightforward patterns in our thinking, hiding away from the complex realities which machines simply approach as another part of the overall data set.

We need some of that clear-sightedness, and a greater willingness to think in more complex ways about things that can never be simple or straightforward. It's time to admit that your computer thinks outside the box more readily than you do. But there's good news too: it can also teach us how to do the same.

対照的に、皮肉にも私たち人間が、思考の中にcomfirmityやstraightforwardなパターンを探し求める傾向にあり、機械が単純にデータセット全体の別の部分として取り組む複雑な現実から隠れようとするのである。

structured, simple, order, clear-sightedness, straightforward, inside the box

型にはまらず
枠にとらわれず

Machine learning: the basics

Machine learning is a concept you may have heard of in connection with another two words that get talked about a lot: artificial intelligence (AI). This often gets presented as the next big sci-fi nightmare. But it is merely a drop in the ocean of the most powerful computer known to humanity, the one that sits inside your head. The brain's capacity for conscious thought, intuition and imagination sets it apart from any computer program that has yet been engineered. An algorithm is incredibly powerful in its ability to *crunch huge volumes of data and identify the trends and patterns it is programmed to find. But it is also painfully limited.

AIが持つ能力は脳が持つ能力のごく一部に過ぎない

the brain

アルゴリズムは膨大な量のデータを処理しプログラム通りに傾向やパターンを特定することにおいては非常に強力であるが、極めて限定的で、人間の脳が持つ意識的な思考、直感、想像力には及ばないから。

Machine learning is a branch of AI. As a concept it is simple: you feed large amounts of data into an algorithm, which can learn or detect patterns and then apply these to any new information it encounters. In theory, the more data you input, the better able your algorithm is to understand and interpret equivalent situations it is presented with in the future.

Machine learning is what allows a computer to tell the difference between a cat and a dog, study the nature of diseases or estimate how much energy a household (and indeed the entire National Grid) is going to require in a given period. Not to mention its achievements in outsmarting professional chess and Go players at their own game.

These algorithms are all around us, processing unreal amounts of data to determine everything from what film Netflix will recommend to you next, to when your bank decides you have probably been *defrauded, and which emails are destined for your junk folder.

Although they *pale into insignificance to the human brain, these more basic computer programs also have something to teach us about how to use our mental computers more effectively. To understand how, let's look at the two most common techniques in machine learning: supervised and unsupervised.

Supervised learning

Supervised machine learning is where you have a specific outcome in mind, and you program the algorithm to achieve it. A bit like some of your maths textbooks, in which you could look up the answer at the back of the book, and the tricky part was working out how to get there. It's supervised because, as the programmer, you know what the answers should be. Your challenge is how to get an algorithm to always reach the right answer from a wide variety of potential inputs.

How, for instance, can you ensure an algorithm in a self-driving car will always recognize the difference between red and green on a traffic light, or what a pedestrian looks like? How do you guarantee that the algorithm you use to help diagnose cancer screens can correctly identify a tumour?

This is classification, one of the main uses of supervised learning, in which you are essentially trying to get the algorithm to correctly label something, and to prove (and over time improve) its reliability for

doing this in all sorts of real-world situations. Supervised machine learning produces algorithms that can function with great efficiency, and have all sorts of applications, but at heart they are nothing more than very fast sorting and labelling machines that get better the more you use them.

Unsupervised learning

By contrast, unsupervised learning doesn't start out with any notion of what the outcome should be. There is no right answer that the algorithm is instructed to pursue. Instead, it is programmed to approach the data and identify its *inherent patterns. For instance, if you had particular data on a set of voters or customers, and wanted to understand their motivations, you might use unsupervised machine learning to detect and demonstrate trends that help to explain behaviour. Do people of a certain age shop at a certain time in a certain place? What unites people in this area who voted for that political party?

In my own work, which explores the cellular structure of the immune system, I use unsupervised machine learning to identify patterns in the cell populations. I'm looking for patterns but don't know what or where they are, hence the unsupervised approach.

This is clustering, in which you group together data based on common features and themes, without seeking to classify them as A, B or C in a preconceived way. It's useful when you know what broad areas you want to explore, but don't know how to get there, or even where to look within the mass of available data. It's also for situations when you want to let the data speak for itself, rather than imposing pre-set conclusions.

(Adapted from C. Pang, *Explaining Humans: What Science Can Teach Us about Life, Love and Relationships*)

(注)

*amid ～の中で

*crunch （大量のデータを）高速処理する

*defraud 金をだまし取る

*pale into insignificance （～に比べて）取るに足らない

*inherent 内在する

問１　下線部(A)について，人間の思考とコンピュータ・プログラムの動作の類似点を，本文に即して３つ日本語で指摘しなさい。

(1)

(2)

(3)

問２　下線部(B)を日本語に訳しなさい。

問３　下線部(C)のように主張する理由を，本文に即して日本語で説明しなさい。

問４　unsupervised learning に関係するものを，次の(ア)~(カ)の中から 3 つ選び，記号で答えなさい。

(ア) classifying — without seeking to classify them as A, B, or C in a preconceived way

(イ) detecting trends in shopping — そのままあった

(ウ) differentiating between red and green traffic lights — ？よくわからん

(エ) grouping — group together data

(オ) no outcome in mind — not - with any notion of what the outcome should beとかいっぱい

(カ) preconceived outcome — ↑と逆やん

問５　本文の内容から正しいと判断できる英文を，次の(ア)~(オ)の中から２つ選び，記号で答えなさい。

(ア) Machine learning tends to seek straightforward patterns in thinking, but humans do not.

(イ) Machine learning is a subset of artificial intelligence that deals with pattern detection via large data sets processed by algorithms. — the basics

(ウ) The human brain is a far less powerful information processing device than even basic computer programs.

(エ) Machine learning allows computers to defeat professional chess players, but not Go players.

(オ) We can learn how to make decisions more effectively by studying machine learning.

Scanning

5 次の英文を読んで問いに答えなさい。〔2020 島根大（医）第 3 問〕

Modern drug therapy began with "salvarsan," developed by Dr. Paul Ehrlich as a treatment for syphilis. Salvarsan, introduced in 1911, was the first drug to attack the root cause of the disease it treated. Its astonishing effectiveness earned it the nickname "Dr. Ehrlich's Magic Bullet"—a reflection of the public's perception of it as a modern miracle. Two mid-twentieth-century pharmaceutical triumphs solidified the public's belief in "miracle drugs." The first was penicillin and, by extension, the many other antibiotics that followed it. (1)Antibiotics reduced a bacterial infection (from a life-threatening crisis to a brief unpleasantness) ending a long era (in which any injury or surgery that broke the skin carried a substantial risk of death from secondary infection. The second was the Salk polio vaccine and by extension the vaccines that followed it for measles, mumps, and other childhood diseases. These vaccines (administered through massive vaccination campaigns tied to public school attendance) had (2)spectacular results. Diseases that had once killed infants and young children by the thousands all but vanished from the industrialized world within a generation.

Penicillin and the polio vaccine raised public expectations of what drugs in general could do. (3)Their rapid, highly publicized successes and their lack of obvious, significant demerits furthered a belief in drug therapies as a kind of modern-day magic, capable of eliminating any disease, (no matter how terrible) in a single stroke. The rapid introduction of new drugs and equally rapid control of old diseases created another expectation, that science could develop drugs to prevent or cure any disease. Popular culture strongly reflects both expectations.

Medical dramas routinely use doctors as heroes, and why-is-this-patient-sick puzzles as the focus of their plots. The climax of such plots comes when the hero solves the puzzle and (as a result) realizes how to cure the patient. The cure and the recovery that follows are brief epilogues to the main plot, less dramatically interesting, because they only involve the hero a little or not at all. Both realistic medical stories like the TV series *ER* and fanciful ones like the movie *Outbreak* routinely cut, therefore, from the administration of a drug to evidence that the patient is recovering. Adventure stories where the dramatic focus is on getting the drug to the patient (as in Tom Godwin's famous 1942 science fiction story *"The*

Cold Equations") work in similar ways. Once the obstacles are overcome and the patients have the drug, their quick recovery is assumed or shown in a brief closing scene. The cumulative effect of (4) both kinds of stories is to emphasize the speed and effectiveness with which the drugs work, enhancing their "miraculous" image.

Drug manufacturers — now able, because of deregulation, to advertise prescription medications in the mass media — play on the same kinds of expectation. Their advertisements typically show beautiful people enjoying life to the fullest amid beautiful settings, implying that this is possible (5) (effects / a / them / because / has / from / drug / the / freed / new) of an unpleasant medical condition. The seniors can play with their grandchildren because the pain of their arthritis decreases, the young woman can walk through fields of flowers because her allergies are controlled. Viewers are (6) (to / the / their / ask / urged / doctor / right / is / whether / drug) for treating their condition. If it is, the advertisements imply, their lives too can be miraculously improved.

Dozens of diseases remain unconquered or uncontrolled; popular culture and public expectation hold, however, that they soon will be, if only enough time and resources are devoted to research. Dozens of charities raise money for research on specific diseases, from Parkinson's disease and muscular dystrophy to AIDS, by appealing to donors' faith that a cure can be found if we only look hard enough. Drug companies, lobbying against price-control legislation in the late 1990s, argued that reducing their profits would shrink their research budgets and slow development of new "miracle drugs." The public's faith that a "magic bullet" exists (or can be found) for every disease is also evident in two common expressions.

① "How dare we spend money on an allegedly frivolous government program," runs the first, "when we still don't have a cure for a well-known disease?" The disease invoked is typically cancer or, less often, AIDS.

② "We can achieve a great technological breakthrough," laments the second expression, "but we can't cure the common cold." Both statements imply that our lack of will is responsible for the lack of a cure. (7) The evolution of drug-resistant bacteria and the vaccine-defeating, ever-changing varieties of the cold virus suggest another possibility: that our microscopic enemies may have us outsmarted.

(Van Riper, Science in Popular Culture より 一部改変)

注　syphilis 梅毒　deregulation 規制緩和

1　下線部(1)を日本語に直しなさい。

2　下線部(2)の具体的内容を、本文にそって日本語で説明しなさい。

3　下線部(3)を日本語に直しなさい。

4　下線部(4)の具体的内容を、本文にそって日本語で説明しなさい。

5　下線部(5), (6)の(　)内の語を意味が通じるように並べ替えなさい。

(5)

(6)

6　**省略**

7　下線部(7)を日本語に直しなさい。

5 指示に従い、それぞれの問いに答えよ。（短いのいろいろ）

1．〔2024 京都府立大（後期）第 2 問〕むずずずず

つぎの英文を日本語に訳しなさい。

The power of art to function as an instrument of emotional expression and externalization of unconscious material is tremendous. However, bearing in mind the highly subjective nature of art interpretation, one should question the accuracy and validity of the viewer's inferences regarding the emotional state or personality characteristics of the artist.

2．〔2024 福岡大（2/3，一般前期など）第 1 問〕 意味をとるのはかんたんたん、日本語ととのえるのむず

次の英文の下線部を和訳せよ。

For many of her readers, Agatha Christie's works are characterized by the landscape of the closed community in both rural and city settings. It is the dialectic nature of the physical space of the landscape or setting, and the detective (and often the criminal too), in Christie's fiction that interests psychogeographers, who study the impact of place and space on the human mind. A contemporary of Christie, W. H. Auden, "confessed" his love for detective fiction through his analysis of it in one of his essays. As part of this analysis, he outlined the importance of place and space as an essential part of an effective detective story, of which all of Christie's works provide supreme examples.

この分析の一部として、彼は場所と空間の重要性は効果的な探偵小説に欠かすことができないと述べており、クリスティの作品全てがそのこの上ない例を提供している。

注：dialectic 弁証法的な　　psychogeographer(s) 心理地理学者

3．〔2017 昭和薬科大（2/4，B 方式），薬，第 2 問，設問を省略し注釈を減らした〕かんたんたんたん

下線部“music as therapy”とはどのようなものですか。40 字以内の日本語で説明しなさい(句読点も字数に含みます)。

The concept of music as a positive healing influence for health and well-being can be traced back to Plato and Aristotle, who believed that music had the ability to promote health in mind and body. Followers of Pythagoras developed a science of music psychotherapy and Homer claimed that music could help to avoid negative emotions. Musical instruments have existed for thousands of years, during which magical powers were attributed to sound.

A distinction can be made between ‘music therapy’ and music as therapy. The former is practised by trained music therapists, while the latter may be used in a more informal manner to achieve significant improvements in health and well-being. Autobiographical recall in patients with dementia can be considerably improved by music and it is believed that music creates a level of coherence* between the electrical activities of different areas of the brain. Music was also used to the form of incantations*, songs, rhythms and sounds, to drive away evil spirits, brush away sins and calm the gods.

注：coherence* 統一，一致　incantations* 呪文，まじない

4．〔2015 中央大（2/13，一般，法)〕 意味をとるのはかんたんたんたん、日本語ととのえるのむず

次の英文の下線部(a)と(b)を日本語に訳しなさい。

As the 21st century proceeds, tasks facing our species will become increasingly complex. (a)Many problems that in an earlier era might have been easily addressed by one person will now require a sophisticated set of abilities contributed by different people. The individual contributions must be complementary; the whole must be more than the sum of its parts.

This much seems obvious. But no part of contemporary formal education — at any point from kindergarten through post-graduate work — is designed to teach people how to interact effectively with other people in goal-oriented groups. When such a group functions well, it combines and enhances the talents and abilities of its members. But (b)at present such a phenomenon occurs because of a lucky combination of people who happen to have distinct skills and abilities relevant to the task at hand, and who also happen to be able to interact effectively. It's not obvious how best to compose a group to facilitate such synergy. But most people don't seem aware that there's a problem here.

(a)

(b)

5．〔2020 京都市立芸術大学（3/12，一般（一次），音楽），語数指示を追加〕むずず？

次の文章の内容を日本語で要約しなさい。　※ 100 字前後とする。

Any physical theory is always provisional, in the sense that it is only a hypothesis: you can never prove it. No matter how many times the results of experiments agree with some theory, you can never be sure that the next time a result will not contradict the theory. On the other hand, you can disprove a theory by finding even a single observation that disagrees with the predictions of the theory. [...] A good theory is characterized by the fact that it makes a number of predictions that could in principle be disproved by observation. Each time new experiments are observed to agree with the predictions, the theory survives and our confidence in it is increased; but if ever a new observation is found to disagree, we have to abandon or modify the theory.

(Stephen Hawking. A Briefer History of Time. New York: Bantam Dell, 2005)

〔註〕　provisional=暫定的，一時的　　hypothesis=仮説
contradict=矛盾する，相反する　　disprove=反証(誤りであることを証明)する
predictions=予測

6．〔2020 兵庫県立医科大（1/29，一般Ａ（一次），医），(2)は省略〕かんたんたんたんたん

次の英文を読んで，あとの設問に答えなさい。

Doctors often don't get the distinction between curing and healing, but (1)patients instinctively do. For most doctors, if the disease has been eradicated — well, that's success. For patients, that's only part of the process — a significant one, obviously, but not the only one. Plenty of patients walk out of our hospitals, clinics, and offices with their diseases under control, and yet they do not feel healed.

Paying attention to emotions within the doctor-patient interaction doesn't guarantee healing, no doubt. But (3)ignoring them surely makes it less likely. (4)"Healing is a matter of time," wrote Hippocrates, "but it is sometimes also a matter of opportunity." Taking this opportunity can be prescriptive for both doctors and patients.

出典：Danielle Ofri, What Doctors Feel: How Emotions Affect the Practice of Medicine. Boston: Beacon Press, 2013. Page 211.

(1) 下線部(1)にある do の内容を明らかにして，下線部(1)全体を和訳しなさい。

＿＿

(3) 下線部(3)にある them と it の内容を明らかにして，下線部(3)全体を和訳しなさい。

＿＿

(4) 下線部(4)を和訳しなさい。

＿＿

＿＿

7．〔中央大（年度，方式，学部など不明)〕 かんたん、けどダッシュどうしよ

次の英文を読んで，下線部(1)，(2)を日本語に訳せ。

For many of us, our early experience of power was something wielded by our parents like a dangerous sword, to make us perform and obey while living under their rule. Their motivation was partly to socialize us and partly to make their lives less chaotic so that the home could be run without too many disruptions or crises. (1)The result is that from a very early age, even before we were aware of ourselves in relationship to others, most of us were being controlled, manipulated and offered conditional love. 'Yes, you can have a biscuit if you behave yourself,' or 'If you're a good little girl, I'll buy you that lovely dress we saw the other day.' From this kind of conditioning we learn that 'good' and 'bad' behavior are what our carers want and don't want us to do. However, (2)as we grow up, we also have to grasp many different value systems — that of school, that of our friends and eventually that of the workplace — each with their own set of beliefs about what is appropriate behavior. Given the many mixed messages we receive as we grow up, it's inevitable that our relationship to power and control can break down.

(a)

_____

_____

_____

(b)

_____

_____

_____