1. 次の英文を読み，設問に答えなさい。

Robot ethics is a growing interdisciplinary research effort roughly in the intersection of applied ethics and robotics with the aim of understanding the ethical implications and consequences of robotic technology. This article argues that the best approach to robot ethics addresses researchers, theorists, and scholars from areas as diverse as robotics, computer science, psychology, law, philosophy, and others. Many areas of robotics are (い) (1. impact, 2. impacted, 3. impacting, 4. impacts), especially those where robots interact with humans, ranging from elder care and medical robotics, to robots for various search and rescue missions, including military robots, to all kinds of service and entertainment robots [A]. (1) military robots were initially a main focus of the discussion (e.g., whether and when autonomous robots should be allowed to use lethal force or to make those decisions autonomously, etc.), in recent years, the impact of other types of robots, in particular social robots, has become an increasingly important topic as well.

Consider, for example, robot *R* supporting an elder person *P* who just had a very bad night and is in agonizing pain [B]. (2) *R* has a goal to minimize *P*'s pain, it asks whether it could help *P* find a more comfortable position in bed, but *P* asks for pain medication instead. *R* has an obligation to consult with *P*'s remote human supervisor before giving *P* any medication, but (ろ) (1. duplicated, 2. duplicating, 3. repeated, 4. repeating) attempts to contact the supervisor fail. What should *R* do? Leave *P* in pain or give *P* the pain medication (e.g., because it knows that in *P*'s case taking pain medication is inconsequential). What would a human health-care provider do? This is one of many possible, even likely, scenarios where future autonomous robots with (limited) decision-making capabilities might find moral dilemmas in social situations [C]. The question (3) becomes how such robots should react, whether they should be allowed to override rules, be capable of employing moral emotions (such as empathy), and be capable of some general ethical understanding (based on some ethical theory) that can guide their reasoning, decision-making, and ultimately, justifications of their decisions and actions.

Robot ethics is a nascent interdisciplinary field, and none of the questions raised above have been answered conclusively yet [D]. In fact, the field has yet to develop its own integrated methodology. While there have been an (は) (1. enlarged, 2. enlarging, 3. increased, 4. increasing) number of research publications on this topic, especially from the philosophy and robotics communities, that discuss ethical questions related to robot technology from different perspectives, we started to see more attempts to employ empirical methods to evaluate human attitudes and judgments about autonomous robots in ethical contexts in recent periods. There is a clear trend toward applying more integrated methods and empirical studies (in addition to conceptual analysis) for determining the possible effects autonomous robots can have on humans. This will be a critical direction for forthcoming research. (4), it will be significant to investigate computational architectures for autonomous robots that integrate techniques for ethical reasoning and decision-making (e.g., from machine ethics) to constrain the robot's actions and behaviors (e.g., to prevent it from performing actions that in a (に) (1. gifted, 2. give, 3. given, 4. giving) context are impermissible). On the (X) side, we will have to thoroughly answer the questions about the human impact, both at the individual and societal levels, of robot technology. And on the (Y) side, we have to develop algorithms that minimize the potential hazard robots can cause, especially as automation is moving forward rapidly, and mobile autonomous robots are increasingly being (ほ) (1. deployed, 2. deploying, 3. displaced, 4. displacing) (e.g., from self-driving vehicles for agriculture to toys).

(Adapted from Matthias Scheutz, "What Is Robot Ethics?" *IEEE ROBOTICS & AUTOMATION MAGAZINE*, December, 2013)

［1］ 空所（ 1 ）～（ 4 ）に入る最も適切な表現を選択肢1～4の中から選び，マークシートの解答欄 (1) から (4) にマークしなさい。なお，文頭にくるべき語も頭文字を小文字にしてあります。

1. similarly　　2. since　　3. then　　4. while

［2］ 本文中の（ い ）～（ ほ ）のそれぞれに入る文脈から最も適切な表現を選択肢1～4の中から選び，マークシートの解答欄 (5) から (9) にマークしなさい。

［3］ 下記の【　　】内の文が入る本文中の位置として最も適切なものを選択肢1～4の中から選び，マークシートの解答欄 (10) にマークしなさい。

【: no matter what they do, they are likely to cause humans pain and suffering】

1. [A]　　2. [B]　　3. [C]　　4. [D]

［4］ 空所（ X ）と（ Y ）に入る最も適切な表現の対を選択肢1～4の中から選び，マークシートの解答欄 (11) にマークしなさい。

1. X: engineering, Y: science　　2. X: science, Y: engineering
3. X: science, Y: reverse engineering　　4. X: technology, Y: science

［5］ 次の文は英文全体の要旨を述べたものである。下記の空所（ ア ）～（ コ ）に入る表現として最も適切なものを選択肢1～4の中から選び，マークシートの解答欄 (12) から (21) にマークしなさい。

The field of robot ethics integrates ideas from various academic（ ア ）to think about the ethical challenges that developments in robotics bring. While robots for（ イ ）use were one of the earliest areas of consideration (e.g., should a robot be allowed to kill somebody without human（ ウ ）), more recently questions related to social robots have also gained attention. Consider, for example, a robot facing this（ エ ）: a patient it is watching over is in terrible pain and wants pain medication. However,（ オ ）requires that it needs the（ カ ）of a human supervisor who is currently unavailable. What should the robot do? Should it be able to override rules based on principles of（ キ ）? While such questions are interesting, the field is so（ ク ）that we do not yet have the methodology necessary to answer them. We need more empirical studies and explorations of computer architecture to help robots（ ケ ）complex situations. We have to study the impact robots have on humans and develop algorithms that can minimize any potential（ コ ）they might do.

(ア)	1. disciplines	2. philosophies	3. industries	4. think tanks
(イ)	1. military	2. medical	3. elderly	4. personal
(ウ)	1. operator	2. error	3. dignity	4. oversight
(エ)	1. program	2. conundrum	3. metaphor	4. achievement
(オ)	1. protocol	2. empathy	3. common sense	4. reason
(カ)	1. interest	2. button	3. service	4. permission
(キ)	1. compassion	2. error	3. medicine	4. history
(ク)	1. big	2. exciting	3. confusing	4. new
(ケ)	1. reject	2. avoid	3. navigate	4. adopt
(コ)	1. danger	2. harm	3. responses	4. problems

2. 次の英文を読み，設問に答えなさい。

Leave the door open for the unknown, the door into the dark. That's where the most important things come from, where you yourself came from, and where you will go. Three years ago, I was giving a workshop in the Rockies. A student came in bearing a quote from what she said was the pre-Socratic philosopher Meno. It read, "How will you go about finding that thing the nature of which is totally unknown to you?" I copied it down, and it has stayed with me since. The student made big transparent photographs of swimmers underwater and hung them from the ceiling with the light shining through them, so that to walk among them was to have the shadows of swimmers travel across your body in a space that itself came to seem aquatic and mysterious. The question she carried struck me as the basic ①tactical question in life. The things we want are transformative, and we don't know or only think we know what is on the other side of that transformation. Love, wisdom, grace, inspiration—how do you go about finding these things that are in some ways about extending the boundaries of the self into unknown territory, about becoming someone else?

Certainly for artists of all stripes, the unknown, the idea or the form or the take that has not yet arrived, is what must be found. It is the job of artists to open doors and invite in (1), the unknown, the unfamiliar; it's where their work comes from, although its arrival signals the beginning of the long disciplined process of making it their own. Scientists too, as J. Robert Oppenheimer once remarked, "live always at the 'edge of mystery'—the boundary of the unknown." But they transform the unknown into the known, haul it in like fishermen; artists get you out into that dark sea.

Edgar Allan Poe declared, "All experience, in matters of philosophical discovery, teaches us that, in such discovery, it is the unforeseen upon which we must calculate most largely." Poe is (2) the word "calculate," which implies a cold counting up of the facts or measurements, with "the unforeseen," that which cannot be measured or counted, only ②anticipated. How do you calculate upon the unforeseen? It seems to be an art of recognizing the role of the unforeseen, of keeping your balance amid surprises, of collaborating with chance, of recognizing that there are some essential mysteries in the world and thereby a limit to calculation, to planning, to control. To calculate the unforeseen is perhaps exactly the paradoxical operation that life most requires of us.

On a celebrated midwinter's night in 1817 the poet John Keats walked home talking with some friends "and several things dovetailed in my mind, and at once it struck me what quality went to form a Man of Achievement, especially in Literature.... I mean Negative Capability, that is, when a man is capable of being in uncertainties, mysteries, doubts, without any irritable reaching after fact and reason." One way or another this notion occurs over and over again, like the spots labeled "terra incognita" on old maps.

"Not to find one's way in a city may well be uninteresting and (3). It requires ignorance—nothing more," says the twentieth century philosopher-essayist Walter Benjamin. "But to lose oneself in a city—as one loses oneself in a forest—that calls for quite a different schooling." To lose yourself: a voluptuous surrender, lost in your arms, lost to the world, utterly immersed in what is present so that its surroundings fade away. In Benjamin's terms, to be lost is to be fully present, and to be fully present is to be capable of being in uncertainty and mystery. And one does not get lost but loses oneself, with the implication that it is a ③conscious choice, a chosen surrender, a psychic state achievable through geography.

That thing the nature of which is totally unknown to you is usually what you need to find, and finding it is a matter of getting lost. The word "lost" comes from the Old Norse *los*, meaning the disbanding of an army, and this origin suggests soldiers falling out of formation to go home, a ④truce with the wide world. I worry now that many people never disband their armies, never go (4) what they know. Advertising, alarmist news, technology, incessant busyness, and the design of public and private space conspire to make it so.

(Adapted from Rebecca Solnit, *A Field Guide to Getting Lost*, 2005)

［1］ 下線部①～④の意味に最も近いものを選択肢1～4から選び，マークシートの解答欄 (22) から (25) にマークしなさい。

①	1. illusory	2. strategic	3. sufficient	4. urgent
②	1. conjectured	2. created	3. mimicked	4. understood
③	1. considerate	2. deliberate	3. spontaneous	4. wise
④	1. call to action	2. fight	3. pact of peace	4. surrender

［2］ 空所（ 1 ）～（ 4 ）に入る最も適切な語を選択肢1～4の中から選び，マークシートの解答欄 (26) から (29) にマークしなさい。

(1)	1. facts	2. history	3. laws	4. prophesies
(2)	1. citing	2. criticizing	3. juxtaposing	4. suggesting
(3)	1. banal	2. complicated	3. destructive	4. exciting
(4)	1. after	2. beyond	3. inside	4. towards

［3］ 英文の内容に最も一致するものを選択肢1～6から2つ選び，マークシートの解答欄 (30) と (31) にマークしなさい。ただし，解答の順序は問いません。

1. A man (or a woman) of achievement in literature tends to believe that their achievement is negative.
2. It is impossible to get lost on purpose.
3. Meno's student hung see-through photos of swimmers and let light shine through them to project images onto people's bodies.
4. The Old Norse word *los* means for an army to disperse and for its soldiers to go home.
5. The things which truly transform us are things which are difficult to know in advance.
6. You should leave your door open for people you don't know.

［4］ 英文には5名の人物の発言が引用されている。各人物の発言の主旨に最も近いものを選択肢1～9から選び，マークシートの解答欄 (32) から (36) にマークしなさい。

J. Robert Oppenheimer: (32)　Meno: (33)　John Keats: (34)

Edgar Allan Poe: (35)　Walter Benjamin: (36)

1. How will you find something if you don't know what it really is?
2. People who write literature do not care about facts or reason.
3. A city education does not prepare you for walking in a forest.
4. Learning something new in philosophy requires you to know, most of all, that there are things you cannot know in advance.
5. People who achieve something in literature have the ability to live with uncertainty without an appeal to facts or reason.
6. How will you find something if you don't know its name?
7. Philosophically speaking, if you can't see something in advance, you can't learn it.
8. Scientists live on the borderline of the known and the unknown.
9. To surrender yourself in a city in the same way you surrender yourself in a forest takes a special type of education.

3. Read the following dialogue between a man and a woman at an airport and answer the questions which follow.

Mr. Hiyoshi: I'm going to miss you, you know! I wish I could have ①talked you out of this!
Ms. Yagami: This is something I've been wanting to do since I was a little girl. When I come back, you're going to have to call me Dr. Yagami!
Mr. Hiyoshi: I'll come and visit you the first chance I get. I hope you'll have time for me. I know you're going to be hitting the books pretty hard.
Ms. Yagami: I'll always make time for you. We can go and visit the Grand Canyon or something.
Mr. Hiyoshi: That sounds great. I'll try to keep my head down and work hard, too. If I can just manage to keep busy, I know the time will fly by. Now don't go falling in love with some brainiac the moment you get there. You know I'm ②head over heels for you.
Ms. Yagami: You worry too much! The only thing I'll be falling in love with is quantum mechanics. You know what I always say: girls, be ambitious!
Mr. Hiyoshi: That sums you up ③to a T. I guess this is the price I pay for falling in love with ④a go-getter. They say absence makes the heart grow fonder. Well, I'm going to be growing even fonder of you over the next three years.
Ms. Yagami: I'd better go now. I'll message you the moment I get there.

[1] Choose the word or phrase with the most similar meaning for each of the underlined expressions ① through ④ in the dialogue. Mark your answers on the mark sheet in (37) through (40).

① 1. confessed my feelings for you 2. convinced you not to go
3. explained my position better 4. reassured you things are going to be okay
② 1. concerned 2. confused 3. crazy 4. happy
③ 1. alphabetically 2. mathematically 3. perfectly 4. terribly
④ 1. an active person 2. an ambitious person 3. a fast person 4. a greedy person

[2] The following message was written by Ms. Yagami to Mr. Hiyoshi following her arrival in California. Read the message and answer the questions below.

I'm happy to report I've (1) it safely to California. The weather is warm, and I'm already missing you! It was so nice of you to see me (2) at the airport. I'm glad we had a chance to chat. As I mentioned, this is something I've been wanting to do since I was young. I want to (3) myself and see how far I can go. I know you were only joking when you talked about me falling in love with some (4), but I meant what I said. My only love (5), after you of course, is quantum mechanics. I know you called me a go-getter yesterday, and that's exactly what I am. I'm going out into the world to make my (6). I hope you'll keep working hard in Japan, too. I can't wait until you get here. I'll do some (7) around and find the best places to take you. I have a week or so to (8) in and then the real work begins. Wish me luck!

Choose the best options below for numbers (1) through (4). Mark your answers on the mark sheet in (41) through (44).

1. arrived 2. brain surgeon 3. intellectual 4. landed 5. made
6. off 7. on 8. push 9. pull

Choose the best options below for numbers (5) through (8). Mark your answers on the mark sheet in (45) through (48).

1. be 2. hobby 3. interest 4. mark 5. memory
6. potion 7. scouting 8. settle 9. shopping

4.

［1］ 次の英文を読み，その主旨を 90 ～ 110 字の日本語で述べなさい。句読点も字数に含めます。

The basic question that I should like to consider is this: Why are scientists in many cases so deeply interested in their work? Is it merely because it is useful? It is only necessary to talk to such scientists to discover that the utilitarian possibilities of their work are generally of secondary interest to them. Something else is primary. What is it?

Is it then that the scientist likes to solve puzzles? Does he want to get a "kick" out of meeting the challenge of explaining a natural process, by showing how it works? Of course, a scientist may often find this aspect of his work enjoyable. Nevertheless, such enjoyment has properly to come as a by-product of something else that goes much deeper than this. Indeed, if a scientist worked mainly in order to get hold of such pleasures and continue them as long as possible, his activity would be not only rather meaningless and trivial, but also contrary to what is needed for carrying out his research effectively.

It seems, then, that the answer to the question of why the scientists are so deeply interested in their work is not to be found on such a superficial level. Scientists are seeking something that is much more significant to them than pleasure. One aspect of what this something might be can be indicated by noting that the search is ultimately aimed at the discovery of something new that had previously been unknown. But, of course, it is not merely the novel experience of working on something different and out of the ordinary that the scientist wants—this would indeed be little more than another kind of "kick." Rather, what he is really seeking is to learn something new that has a certain fundamental kind of significance: a hitherto unknown lawfulness in the order of nature, which exhibits unity in a broad range of phenomena. Thus, he wishes to find in the reality in which he lives a certain oneness and totality, or wholeness, constituting a kind of harmony that is felt to be beautiful.

(Adapted from David Bohm, *On Creativity*, 1998)

［2］ 次の和文を読み，下線部分を英語に翻訳しなさい。

差別について，「足を踏まれた者はそのことに敏感に気付くが，踏んでいる者は気付かない」ということがよく言われる。「マジョリティー」とは，「気付かずにいられる人々」のことだという定義もある（ケイン樹里安）。自分が傷つく立場ではないからこそ気付かないでいられ，鈍感でいられる。それが「特権」だ。

女性たちの境遇を想像できない鈍感さ。地域や階層にまつわる屈折やルサンチマンを経験しないで済むことの特権性。ぼくには，ネット上で衝突し合っている両者は，互いに，自分自身には敏感だが，他者には鈍感であり，被害には過敏で，加害には無感覚なように見えた。

恐れるのは，互いに「中央のブルジョア」「女性差別主義者」といったレッテルを貼り，「敵／味方」の構図と「分断」が生じる事態だ。いったん「敵／味方」の構図ができると，人は想像や共感を麻痺（まひ）させることを正当化しやすい。

しかし，<u>様々な人が多種多様な背景，経験，個性を表現し，交流できるインターネットを，このように使うのは，もったいない。</u>

（藤田直哉，「『セレブバイト』炎上，悲しい他者への鈍感さ」，朝日デジタル2021年 6 月19日より一部改変）