

1. 次の英文を読み、設問に答えなさい。

In the future, the joke goes, airliners will each have a pilot and a dog. ^(a)The dog will be there to bite the pilot if he touches the controls, and the pilot will be there to feed the dog. It's no joke, though, when NASA scientists begin entertaining the idea of replacing the copilot with a wideband connection to a ground controller. Who will take over the plane should the pilot become ^①incapacitated? Nor is it a(n) (い) to carry the (い) to its logical conclusion and do away with the pilot altogether.

It's an attractive vision. An ^②autonomous airplane reliable enough to be trusted by passengers and air-safety regulators could save not just on salaries but also on the cost of making sure that well-rested flight crews are united with their assigned planes. That ^③logistical problem will get harder as the pilot shortage worsens, and it will be hardest of all for short-hop air service, where the pilot-to-passenger ratio is high. Now comes a slew of startups* that propose to serve that very ^④niche with tiny, autonomous aircraft. Most would be powered by electricity, use multiple propellers or ducted fans, take off vertically or nearly so, and range perhaps a few tens of kilometers.

When so many new startups are pursuing the same goal, it's tempting to think there must be something there. But (ろ) springs eternal in tech land, and so does the (ろ) to promise big. All these companies have proven tight-lipped, which suggests that there might be ^(b)less than meets the eye. "It can be done—^(c)we could be flying around in pilotless planes, just as we could be living in cities on Mars—but is it worth the cost and the effort?" asks Patrick Smith, author of the Ask the Pilot column, which ran for years in Salon magazine. "I fly airplanes ^(d)for a living, and my jaw drops when I hear people say that flying is already mostly automated. Even the most 'automated' flight is still subject to so much human (は) and subjective (は)."

So why then are all these startups starting up? "It'd be a novelty, not necessarily meant even for profit, but as a way to prove and build the technology," Smith suggests. And should one of these outfits ever (に) seats to the paying public, would you (に) your life to a robotic pilot? "People want a pilot in the cockpit, to know there's someone in charge who shares their fate," says Missy Cummings, a former U.S. Navy fighter pilot, now a professor of mechanical engineering and materials science at Duke University. "I don't think we'll ever have a passenger airliner be a drone—there will always be some version of a Captain James T. Kirk** on board." But, she adds, things are different for hops of, say, 50 miles (80 kilometers), where for some people, at least, convenience might outweigh fear.

"It's technologically achievable in the near term," Cummings says. Noting the regulatory environment, she adds, "I think we'll see it in China first. Ehang (a manufacturer in Guangzhou, China) is supposedly doing a test in March." The company claims that its roboplane has already carried a passenger, and if it performs the ^⑤feat in public, we'll let you know.

*新設企業

**米国のSFテレビドラマシリーズ『スタートレック』に登場する宇宙船の船長

(Adapted from Philip E. Ross, "Autonomous Air Taxis will take off in 2017, but won't go far"

IEEE Spectrum, December 30, 2016)

[1] 下線部 (a) ~ (d) が言い表している内容の説明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 (1) ~ (4) にマークしなさい。

- | | | | | |
|-----|-----------|-------------|----------|-----------|
| (a) | 1. 犬猿の仲 | 2. 猿も木から落ちる | 3. 竹馬の友 | 4. 無用の長物 |
| (b) | 1. 視線を交わす | 2. 間に合わない | 3. 見掛け倒し | 4. 眼鏡にかなう |

- | | | | |
|-------------|-----------|-------------|--------------|
| (c) 1. 後の祭り | 2. 棚からぼた餅 | 3. 捕らぬ狸の皮算用 | 4. 労多くして功少なし |
| (d) 1. 命がけで | 2. 趣味で | 3. 人類のために | 4. 生業として |

[2] 空所 (い) ~ (に) に入る最も適切な語のペアを、選択肢 1 ~ 5の中から別のものをそれぞれ1つ選び、マークシートの解答欄 (5) ~ (8) にマークしなさい。

- | | | | |
|--------------------|----------------------|--------------------|---------------------|
| 1. hope / tendency | 2. input / decisions | 3. joke / argument | 4. lend / sacrifice |
| 5. offer / entrust | | | |

[3] 下線部 ① ~ ⑤ の意味の説明として最も適切でないものを選択肢 1 ~ 4の中から選び、マークシートの解答欄 (9) ~ (13) にマークしなさい。

- | | | | |
|---------------------|-----------------|--------------------|--------------|
| ① 1. bored | 2. disabled | 3. hurt | 4. paralyzed |
| ② 1. pilotless | 2. selfish | 3. self-regulating | 4. unmanned |
| ③ 1. administrative | 2. coordinating | 3. planning | 4. sensitive |
| ④ 1. gap | 2. horizon | 3. opening | 4. slot |
| ⑤ 1. achievement | 2. duty | 3. undertaking | 4. venture |

[4] この英文全体の要旨を述べた文章中の空所 (ア) ~ (ケ) 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 (14) ~ (22) にマークしなさい。

While the article starts with a joke, it soon turns to a serious question: Will we still need pilots in the future? Autonomous planes would solve a number of problems, including how to keep (ア) and support shorter routes with (イ). While the money being invested in various projects might suggest there is cause for optimism, there are reasons to (ウ) the future. Patrick Smith, for example, compares it to living on Mars; it may become technically possible, but is it (エ)? And besides, Smith continues, even today the reality is that flight is still much (オ) than many people realize. Missy Cummings is doubtful we will ever have drone airliners because (カ), though she admits this may be different for shorter flights where (キ) may offset (ク). Cummings believes we will see pilotless flights in China first because of the country's (ケ).

- | | | | |
|--|---|--|--------------------------|
| (ア) 1. costs down | 2. people safe | 3. pilots employed | 4. salaries high |
| (イ) 1. fewer passengers | 2. no airports | 3. no runways | 4. tired pilots |
| (ウ) 1. bank on | 2. believe in | 3. embrace | 4. question |
| (エ) 1. politically correct | 2. safe to do | 3. the best investment of time and resources | 4. the moral thing to do |
| (オ) 1. less automated | 2. less expensive | 3. more automated | 4. more expensive |
| (カ) 1. passengers like to know a human is in control | | | |
| | 2. people like fictional pilots like Captain Kirk | | |
| | 3. there are limits to the technology | 4. there are strict laws about drones | |
| (キ) 1. benefits | 2. business | 3. dreams | 4. technology |
| (ク) 1. legal questions | | 2. pilots' rights | |
| | 3. safety concerns | 4. technological problems | |
| (ケ) 1. ambitious companies | | 2. legal situation | |
| | 3. moral climate | 4. superior technology | |

2. 次の英文を読み、設問に答えなさい。

We are in the midst of a crisis of massive proportions and ①grave global significance. No, I do not mean the global economic crisis that began in 2008. At least then everyone knew that a crisis was at (1), and many world leaders worked quickly and desperately to find solutions. Indeed, consequences for governments were profound if they did not find solutions, and many were replaced in consequence. No, I mean a crisis that goes largely unnoticed, (A) a cancer; a crisis that is likely to be, in the long run, far more damaging to the future of democratic self-government: a worldwide crisis in education.

Radical changes are occurring in what democratic societies teach the young, and these changes have not been well thought through. Thirsty for national profit, nations, and their systems of education, are heedlessly discarding skills that are needed to keep democracies alive. If this trend continues, nations all over the world will soon be producing (い)generations of useful machines, rather than complete citizens who can think for themselves, criticize tradition, and understand the significance of another person's sufferings and achievements. The future of the world's democracies ②hangs in the balance.

What are these radical (ろ)changes? The humanities and the arts are being cut away, in both primary/secondary and college/university education, in virtually every nation of the world. Seen by policy-makers as useless frills, at a time when nations must cut away all useless things in order to stay competitive in the global market, they are rapidly losing their place in curricula, and also in the minds and hearts of parents and children. Indeed, what we might call the humanistic aspects of science and social science — the imaginative, creative aspect, and the aspect of rigorous critical thought — are losing ground as nations prefer to pursue short-term profit by the ③cultivation of the useful and highly applied skills suited to profit-making.

This crisis is facing us, but we have not yet faced it. We go on as if everything were business as usual, when in reality great changes of emphasis are evident all over. We haven't really thought hard (B) these changes, we have not really chosen them, and yet they increasingly limit our future.

(X), especially at this time of crisis, too few questions have been (2) about the direction of education, and, with it, of the world's democratic societies. With the rush to profitability in the global market, values precious for the future of democracy, especially in an era of religious and economic anxiety, are in (は)danger of getting lost.

The profit motive suggests to many concerned leaders that science and technology are of crucial importance for the future (に)health of their nations. We should have no (3) to good scientific and technical education, and I shall not suggest that nations should stop trying to improve in this regard. My concern is that other abilities, equally crucial, are at risk of getting lost in ④the competitive flurry, abilities crucial to the health of any democracy internally, and to the creation of a decent world (ほ)culture capable of constructively addressing the world's most (4) problems.

These abilities are associated with the humanities and the arts: the ability to think critically; the ability to transcend local loyalties and to approach world problems as a "citizen of the world"; and, finally, the ability to imagine sympathetically the predicaments of another person.

(Adapted from Martha C. Nussbaum, *Not for Profit*, 2010)

[1] 下線部 ① ～ ④ の意味の説明として最も適切なものを選択肢 1 ～ 4 から選び、マークシートの解答欄

(23) ～ (26) にマークしなさい。

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|---|--------------------------------------|---------------------------------|---------------|-----------------|
| ① | 1. serious | 2. small | 3. snappy | 4. sneaky |
| ② | 1. is bright | 2. is doomed | 3. is hopeful | 4. is uncertain |
| ③ | 1. basement | 2. development | 3. judgment | 4. payment |
| ④ | 1. the race for military superiority | 2. the race for money and power | | |
| | 3. the race to win students | 4. the race to win votes | | |

[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

(27) ~ (30) にマークしなさい。

- | | | | |
|-------------------|--------------|--------------|---------------|
| (1) 1. hand | 2. most | 3. noon | 4. once |
| (2) 1. ask | 2. posed | 3. replaced | 4. voice |
| (3) 1. correction | 2. objection | 3. rejection | 4. suggestion |
| (4) 1. negligible | 2. pollution | 3. pressing | 4. trivial |

[3] 次の 1 ~ 7 の語 (句) を文法的・内容的に最も適切な順序に並べかえて (X) を完成させたとき、3 番目にくるものの番号を解答欄 (31) に、5 番目にくるものを解答欄 (32) にマークしなさい。なお、文頭にくる語の一字目も小文字にしてある。

1. all 2. given 3. growth 4. is so eagerly 5. nations 6. sought by 7. that economic

[4] (A) と (B) に入る最も適切な語を選択肢 1 ~ 8 の中から選び、それぞれ、マークシートの解答欄 (33) と解答欄 (34) にマークしなさい。

1. about 2. at 3. besides 4. however 5. like 6. moreover 7. that 8. whereupon

[5] 本文の内容を最も適切に表現する表題をつけたい。選択肢 1 ~ 4 から選び、マークシートの解答欄 (35) にマークしなさい。

1. The Fake Crisis 2. The Financial Crisis 3. The Silent Crisis 4. The Visible Crisis

[6] 英文の内容に一致するものを選択肢 1 ~ 8 から 3 つ選び、マークシートの解答欄 (36) ~ (38) にマークしなさい。

1. The radical changes occurring in educational systems around the world are a result of thorough consideration.
2. We should cut away the sciences and devote more resources to the humanities and arts.
3. Cutting the humanities and arts from education is likely to have harmful consequences for the health of democracies.
4. Being able to put your feet in other people's shoes is a key skill connected with the humanities and arts.
5. The humanities and arts are being cut away, but students are fully aware of their importance.
6. There was a worldwide economic crisis which started in 2008.
7. Local traditions are undesirable and should be transcended.
8. Nations today tend not to put enough emphasis on profitability.

[7] 単語 (い) ~ (ほ) の下線部の音が、それぞれの語群 1 ~ 5 の下線部の音と同じものを選び、マークシートの解答欄 (39) ~ (43) にマークしなさい。

- | | | | | | |
|-------------------------|---------------------|----------------------|---------------------|-----------------------|----------------------|
| (い) generat <u>ions</u> | 1. cent <u>u</u> ry | 2. chest <u>n</u> ut | 3. pat <u>i</u> ent | 4. right <u>e</u> ous | 5. subt <u>l</u> e |
| (ろ) chang <u>e</u> s | 1. fatig <u>ue</u> | 2. frag <u>i</u> le | 3. g <u>e</u> ar | 4. g <u>i</u> ggle | 5. g <u>u</u> ess |
| (は) dang <u>e</u> r | 1. fals <u>e</u> | 2. man <u>y</u> | 3. stadi <u>u</u> m | 4. tall | 5. wat <u>e</u> r |
| (に) healt <u>h</u> | 1. breat <u>h</u> e | 2. creat <u>u</u> re | 3. real <u>m</u> | 4. stea <u>k</u> | 5. wea <u>k</u> |
| (ほ) cult <u>u</u> re | 1. brut <u>e</u> | 2. flut <u>e</u> | 3. fur <u>y</u> | 4. musc <u>l</u> e | 5. numer <u>o</u> us |

3. 次の対話文を読み、設問に答えなさい。

Ms. Yagami : So, you're all probably wondering why I asked you about your best friend. (*everyone nods*). Well, that's because we're going to be watching a movie today and...

Patrick : (*interrupting*). It's called "My Best Friend" !

Ms. Yagami : Nice try! But not quite. No, we're actually going to be watching "Hachi: A Dog's Tale" starring Richard Gere. Interesting because no one mentioned their dog or cat or whatever animal you might have as a pet as your best friend. And particularly because I know that some of you do have pets. OK, so the question we're going to be pondering today is whether there can be genuine friendship between us and our pets. What's your initial ① take on this one? (*points at Cecilia*).

Cecilia : Well, I have a cat. I feel very close to it. But you know, it's a "he" but when I talk about it, just like now, I call it "it" and not "him." You see what I mean?

Ms. Yagami : I do, I do. I can see (a) where you're going. You give it a name, you look after it, you care for it, but (b) at the end of the day, it's just not the same as your friend, right? (*Cecilia nods*).

Patrick : I agree. I haven't watched the movie; I do know a little about it though. Loyal dog waits for its owner to come back but he never does because he's dead and the dog dies too waiting for him. So, my best friend has my back. He's there when I need him. But the dog, it's just hungry, you know. It's got no one else to count on. This might be because we've domesticated them. That's our bad, partially. But it's just ② that. Or it just doesn't have the brains to do anything else.

Ms. Yagami : You don't reckon there might be more to it? Some people love their pets more than people.

Patrick : Nah, I know some people say (c) things, but ③ I don't buy it.

Ms. Yagami : Well, let's watch the movie anyway. Maybe you will have (d) second thoughts about your responses.

[1] 下線部①～③の意味に最も近いものを選択肢1～4の中から選び、マークシートの解答欄 (44) ～ (46) にマークしなさい。

- | | | | | |
|---|--|---|---------|------------|
| ① | 1. friendship | 2. payment | 3. ride | 4. thought |
| ② | 1. that dogs are unique | 2. that the dog can sense our love for it | | |
| | 3. that the dog has nobody else to depend on | 4. that the dog is not smart enough | | |
| ③ | 1. I don't deny it | 2. I'm not convinced | | |
| | 3. I'm not going to buy a pet | 4. I won't buy DVDs about human-canine friendship | | |

[2] 下線部 (a) と (b) に関する以下の質問に答えなさい。

(1) Ms. Yagami says, "I can see (a) where you're going." Where is Cecilia going? Mark your answer on the mark sheet (47).

1. to school 2. to the movies 3. to the pet shop 4. none of the above

(2) In the context of this dialogue, what does (b) "at the end of the day" mean? Mark your answer on the mark sheet (48).

1. before midnight on that day 2. by the end of school
3. in the end 4. none of the above

[3] 下線部 (c) と (d) について以下の質問に答えなさい。解答は解答用紙 (記述式) に英語で記入しなさい。

- (1) Based on the dialogue, what might be an example of (c) things people say? Complete the sentence using the opening provided on the answer sheet.
- (2) What does it mean to have (d) second thoughts? Complete the sentence provided on the answer sheet with a word starting with "re."

[4] 対話文の内容に一致するものを選択肢 1～10から4つ選び、マークシートの解答欄

(49)

 ～

(52)

 にマークしなさい。

1. Ms. Yagami is showing the film because the actor Richard Gere offers a good example of friendship.
2. Cecilia sees a difference between her relationship with her cat and her relationships with her friends.
3. Patrick has no opinion about whether pets can be friends because he has not yet seen the movie.
4. Patrick believes the loyalty dogs display is possibly a product of animal breeding.
5. Despite what some people might say, Patrick doubts they love their pets more than people.
6. Ms. Yagami decides to show the film despite her belief that nobody will change their opinion.
7. Both Cecilia and Patrick are skeptical of the idea that pets can be better friends than humans.
8. Cecilia is skeptical but Patrick is open to the idea that pets can be better friends than humans.
9. Cecilia is open to but Patrick is skeptical of the idea that pets can be better friends than humans.
10. Both Cecilia and Patrick are open to the idea that pets can be better friends than humans.

4. 和文の内容とほぼ同じ意味になるように、指定された文字から始まる適切な1語を空所①～⑧に入れて、英文を完成させなさい。解答は解答用紙 (記述式) に記入しなさい。

The Internet of Things (IoT) is the idea that it is not just computers that can be ①(h) up to the Internet, but everyday objects as well. In so doing, they ②(a) new functionality. Add Wi-Fi and a motion sensor to a light bulb and you have a remote ③(a) system; add Wi-Fi to a stereo system, and you can control your music from your phone. In the ④(c) marketplace, the concept applies to web-connected devices such as thermostats, televisions and cars. But until a few years ago, laboratory equipment could not be ⑤(l) in the same way. The emergence of connected instruments and equipment promises to untether researchers from the laboratory — letting them fine-tune experiments and analyse data remotely. It allows lab managers to monitor instrument use and catch potential equipment ⑥(f) before they happen. But ⑦(s) and economic concerns, and the ⑧(in) teething pains that are inherent in any evolving technology, are moderating enthusiasm.

(Adapted from Jeffrey M. Perkel, "The Internet of Things Comes to the Lab," *Nature*, Vol. 542, 2017)

インターネットオブシングス (IoT) というのは、コンピュータだけでなく、日用品もインターネットにつながることができるという考えである。そうすることで、それらのものは新しい機能性を獲得する。電球にWi-Fiとモーションセンサーをつけると、遠隔警報装置になる。Wi-Fiをステレオシステムにつけると、自分の電話から音楽を操作できるようになる。消費者市場においては、IoTの概念は冷暖房器具、テレビ、車といった、ウェブに接続された装置について当てはまる。しかし、つい数年前までは、実験設備は同じようなやり方でつなげることはできなかった。ネットにつながった器具や設備の出現により、研究者は実験室から自由に動けるようになり、研究者は遠方から実験を微調整したり、データを分析したりできるようになる。実験の管理者は器具の使用を監視することや、ありそうな設備の不具合を事前に見つけることができるようになる。しかし安全性や経済性に関する懸念や、どのような発展途上の技術にも内在する、避けられない初期の困難は、IoTへの熱意を減速させている。

2018年度 理工学部 一般入学試験問題 訂正

教科・科目	ページ	設問	誤	→	正
英語	7	3 [4]	—	→	選択肢10を選ぶ場合はマークシートの0をマークして下さい。