令和５年度　豊橋技術科学大学第３年次入学者選抜学力検査問題

一　般　科　目　（　英　語　）

注　意　事　項

1　試験開始の合図まで，この問題冊子と解答用紙を開いてはいけません。

2　問題冊子の枚数は，表紙，草稿用紙を含めて１０枚です。

3　問題冊子とは別に解答用紙（マークシート）が１枚あります。

4　問題は聴き取りテストを含め５問あります。全問解答してください。

5　解答にかかる前に，解答用紙の所定の箇所に氏名・受験番号を記入・マークしてください。

6　解答は解答用紙の所定の箇所にマークしてください。正しく記入・マークされていない場合は，採点できないことがあります。

7　落丁，乱丁，印刷不鮮明の箇所などがあれば，ただちに申し出てください。

8　問題冊子の余白は草稿用として使用しても構いません。

9　この試験は，聴き取りテストを含みます。聴き取りテストは，１０時００分から始まります。

10　聴き取りテスト終了後，チャイムが鳴るまでの間は，訂正，清書などに適宜利用してください。

11　試験終了時刻まで退出してはいけません。

12　問題冊子は持ち帰ってください。

［１］　英文を読み設問に答えよ。

If, as the saying goes, less is more, why do we humans overdo so much?

In a new paper featured on the cover of Nature, University of Virginia researchers explain why people rarely look at a situation, object or idea that needs improving ─ in all kinds of contexts ─ and think to remove something as a solution. Instead, we almost always add some element, whether it helps or not.

The team's findings suggest a <u>fundamental</u> reason that people struggle with overwhelming schedules, that institutions bog down in proliferating[注1] red tape, and, of particular interest to researchers, that humanity is <u>exhausting</u> the planet's resources.

"It happens in engineering design, which is my main interest," said Leidy Klotz, Copenhaver Associate Professor in the Department of Engineering Systems and Environment. "But it also happens in writing, cooking and everything else ─ just think about your own work and you will see it. The first thing that comes to our minds is, what can we add to make it better. Our paper shows we do this to our detriment, even when the only right answer is to subtract. Even with financial incentive, we still don't think to take away."

Klotz, whose research <u>explores</u> the overlaps between engineering and behavioral science, teamed with three colleagues from the Batten School of Leadership and Public Policy on the interdisciplinary research that shows just how additive we are by nature. Batten public policy and psychology faculty, assistant professor Gabrielle Adams and associate professor Benjamin Converse, and former Batten postdoctoral fellow Andrew Hales, collaborated with Klotz on a series of observational studies and experiments to study the phenomenon.

When considering two broad possibilities for why people systematically default to addition ─ either they generate ideas for both possibilities and disproportionately[注2] discard subtractive solutions or they overlook subtractive ideas altogether ─ the researchers focused on the latter.

"Additive ideas come to mind quickly and easily, but subtractive ideas require more cognitive effort," Converse

said. " 1 people are often moving fast and working with the first ideas that come to mind, they end up accepting additive solutions without considering subtraction at all."

The researchers think there may be a self-reinforcing effect.

"The more often people rely on additive strategies, the more cognitively accessible[注3] they become," Adams said. "Over time, the habit of looking for additive ideas may get stronger and stronger, and in the long run, we end up missing out on many opportunities to improve the world by subtraction."

Klotz has a book that takes a wider view of the topic, Subtract: The Untapped Science of Less, coming out a week after the Nature paper. 2 the timing is coincidence, both the paper and book are products of the interdisciplinary and collaborative research environment at UVA, he said.

"It's an incredibly interesting finding, and I think our research has tremendous implications across contexts, but especially in engineering to improve how we design technology to benefit humanity," Klotz said.

[注1] proliferating ＝ 急増させる
[注2] disproportionately ＝ 不釣り合いに，偏って
[注3] cognitively accessible ＝ 認知可能である

設問1　本文の内容と一致すればTを，一致しなければFを選べ。

1. According to the new paper, the researchers explain why people always try to remove something as a solution.

2. Klotz conducted the study with researchers from different fields.

3. People tend to ignore subtractive ideas.

4．According to the new paper, subtractive strategies are more cognitively demanding.

5．The findings of Klotz's research can only be applied to engineering.

設問2　下線を引いた語句について，文中の意味に最も近いものをA～Dから一つ選び，記号で答えよ。

1．fundamental
    A．immediate   B．only
    C．central   D．true

2．exhausting
    A．creating   B．draining
    C．gathering   D．tiring

3．explores
    A．examines   B．connects
    C．interests   D．adventures

4．rely on
    A．look on   B．put on
    C．look after   D．depend on

5．tremendous
    A．understandable   B．immense
    C．long   D．limited

設問3　文中の　1　に入れるべき語として最も適切なものを，A～Dから一つ選び，記号で答えよ。

    A．Despite   B．Because
    C．But   D．Although

設問4　文中の 2 に入れるべき語として最も適切なものを，A～Dから
一つ選び，記号で答えよ。

  A. Besides   B. If

  C. Although   D. For

設問5　本文の要旨として最もふさわしいものをA～Dから一つ選び，記号で
答えよ。

A. Researchers explained how engineering design is similar
 to writing, cooking and everything else.

B. Researchers explained why people tend to minimize their
 choices in decision making.

C. Researchers explained why engineers should use more
 additive strategies to design technology.

D. Researchers explained why people tend to make changes
 through addition instead of subtraction.

[2]　　空所に入れるべき最も適切な語をＡ～Ｃから選べ。

1. She seems [　　] because she always shows good judgement.
   A. sensible　　　　B. sensed　　　　　　　C. sensitive

2. My parents are not computer [　　].
   A. literacy　　　　B. literal　　　　　　　C. literate

3. A hot climate and [　　] soil can produce good rice.
   A. fat　　　　　　B. fertile　　　　　　　C. hungry

4. TV commercials try to persuade us to buy certain [　　].
   A. commends　　　B. commodities　　　　C. commons

5. The species is currently on the verge of [　　].
   A. extinguish　　　B. extinct　　　　　　C. extinction

6. The problems [　　] the company were enormous.
   A. confronting　　B. consisting　　　　　C. covering

7. You are so [　　] that nobody noticed your achievements.
   A. modern　　　　B. modest　　　　　　C. modulated

8. The manager [　　] her the most difficult job.
   A. assumed　　　　B. assimilated　　　　C. assigned

［３］　空所に入れるべき最も適切な語句をＡ～Ｃから選べ。

1. I would like to have my car [　　] by next Monday.
   　A. repair　　　　　　B. repairing　　　　　C. repaired

2. Neither my boss nor I [　　] happy with the results.
   　A. are　　　　　　　B. am　　　　　　　　C. is

3. Hurry up, [　　] you'll be late for the lesson.
   　A. or　　　　　　　B. and　　　　　　　　C. if

4. I forgot about [　　] Kumamoto because that trip happened
   twenty years ago.
   　A. to visit　　　　B. visiting　　　　　C. being visited

5. Taro [　　] English for seven years before he went to Chicago
   for a master's degree.
   　A. had been learning　　　　　B. has learned
   　C. was learning

6. It's no use [　　] what you have done.
   　A. regret　　　　　B. regretting　　　　C. to regret

7. There are [　　] paintings displayed in the gallery.
   　A. interesting three old　　　B. three old interesting
   　C. three interesting old

8. To keep exercising every week is not [　　] it appears.
   　A. as easy as　　　B. as easy　　　　　C. easier

［４］　和文と同じ意味になるように，（　　）内の語を正しく並べ替えて英文を完成させよ。解答は数字で答えよ。

1. 彼女が帰宅すると，私は彼女のためにコーヒーを一杯入れてあげた。

　　　When she got home, I (1.of　2.cup　3.coffee　4.her　5.a　6.made).

2. 英国で１年間暮らした後，彼はずいぶん上手く英語を話せるようになっていた。

　　　After spending a year in England, (1. well　2. quite　3. he　4. speak　5.English　6.could).

3. 彼らは全てのゴミを大きな黒いビニール袋にまとめて入れた。

　　　They collected all the rubbish (1.plastic　2.into　3.large　4.black　5.bag　6.a).

4. 彼は 18 歳の誕生日まで投票できない。

　　　He won't be (1.old　2.his　3.vote　4.enough　5.until　6.to) eighteenth birthday.

5. ジョアンは彼の住所を知らないし，トムも彼の住所を知らない。

　　　Joanne doesn't know (1.Tom　2.does　3.and　4.address　5.his　6.neither).

聴き取りテスト

　　英文が２度読まれる。続いて，その内容についての質問がそれぞれ２度
読まれる。質問に対する正しい答えをＡ～Ｃから選べ。

I.
1.

    A．Nearly 2,000

    B．Nearly 7,000

    C．Nearly 1,000,000,000

2.

    A．Famine

    B．Local wars

    C．Climate change

II.
1.

    A．20 minutes

    B．1 day

    C．1 month

2.

    A．Recharge its batteries

    B．Identify its owner

    C．Access the internet

III.
1.

    A．High investment costs

    B．Low reliability

    C．Huge size

2.

    A．15,000 flights

    B．22,000 flights

    C．52,000 flights

Passage 1

The impact of climate change on the world is wide-ranging. Tragedies like the Australian bushfires that killed nearly a billion animals make headlines, but extreme weather conditions are endangering wildlife everywhere. According to the IUCN Red List, more than 1,750 species are endangered because of global warming. Of course, climate change affects humans too. Extreme weather can ruin crops, destroying small farming communities and leaving people without food. In developing countries, food and water shortages can cause starvation, the spreading of disease, and regional conflicts.

Question 1: How many species of animals are at risk due to global warming?

   A. Nearly 2,000   B. Nearly 7,000   C. Nearly 1,000,000,000

Question 2: Which of the following is not caused by food and water shortages?

   A. Famine   B. Local wars   C. Climate change

Passage 2

The fastest-selling entertainment robot was the first generation AIBO, made by Sony, Japan. It was first released on Sony's website on May 31, 1999, when an incredible 3,000 units were sold within the first 20 minutes. When AIBO made its way to America on June 1, 1999, the rush to buy the robot caused the internet server to crash. It is easy to see why AIBO is so popular. The little robotic

dog only stops playing when its batteries run out. Its sensors can recognize its surroundings and its owner, and it can learn tricks.

Question 1: How long did customers in the United States have to wait after AIBO was released in Japan?
   A. 20 minutes   B. 1 day   C. 1 month

Question 2: Which of the following is a task that the first generation AIBO can perform?
   A. Recharge its batteries   B. Identify its owner
   C. Access the internet

Passage 3
A new smartphone costs $500 and you use it for a couple of years. A new Boeing 747 costs $320 million. Equipment in industries such as infrastructure (for example, telecommunications), defence, aeronautics, and medicine has to perform reliably for many years to justify the huge investment costs involved. A 747 has an 'economic design life objective' of 52,000 flights during 20 years of operation. And it relies on electronics to make those flights safely and efficiently. This means huge challenges for electronics engineers working on these projects.

Question 1: What feature does equipment for industries such as telecommunications and medicine have in common?
   A. High investment costs   B. Low reliability
   C.Huge size

Question 2: For how long is a Boeing 747 designed to operate reliably?
   A. 15,000 flights   B. 22,000 flights   C. 52,000 flights