早稲田大学　基幹理工学部・創造理工学部・先進理工学部

2023年度　入試問題の訂正内容

＜基幹理工学部・創造理工学部・先進理工学部　一般選抜＞

【英語】

●問題冊子７ページ：Part III Section B　問題文２行目

（誤）the five sentences (1)－(6)

（正）the six sentences (1)－(6)

採点について

このことによって解答への影響はないものと判断し、

採点において特別な措置は講じないこととといたします。

以上

早稲田大学 2023年度
一般選抜 基幹・創造・先進理工学部

英　　語

問　題

2023年度

〈R05170017〉

注　意　事　項

1. この科目では、この問題冊子のほかに、マーク解答用紙を配付します。
2. 試験開始の指示があるまで、問題冊子および解答用紙には手を触れないでください。
3. 問題は２～11ページに記載されています。試験中に問題冊子の印刷不鮮明、ページの落丁・乱丁および解答用紙の汚損等に気付いた場合は、手を挙げて監督員に知らせてください。
4. 解答はすべて、ＨＢの黒鉛筆またはＨＢのシャープペンシルで記入してください。
5. マーク解答用紙記入上の注意
   (1) 印刷されている受験番号が、自分の受験番号と一致していることを確認したうえで、氏名欄に氏名を記入してください。
   (2) マーク欄にははっきりとマークしてください。また、訂正する場合は、消しゴムで丁寧に、消し残しがないようによく消してください。

マークする時	●良い	○悪い	⊖悪い
マークを消す時	○良い	○悪い	⊖悪い

6. 解答はすべて所定の解答欄に記入してください。所定の欄以外に受験番号・氏名を記入した解答用紙は採点の対象外となる場合があります。
7. 問題冊子の余白等は適宜利用してよいが、どのページも切り離してはいけません。
8. 試験終了の指示が出たら、すぐに解答をやめ、筆記用具を置き解答用紙を裏返しにしてください。
9. 問題冊子は持ち帰ってください。
10. いかなる場合でも、解答用紙は必ず提出してください。

Part I. Read Text I, Text II, and Text III and choose the best option from a – d for questions 1 – 15.

Text I

※この部分は、著作権の関係により掲載ができません。

※この部分は、著作権の関係により掲載ができません。

[Adapted from Kahan, D. M. *et al.* (2012). The polarizing impact of science literacy and numeracy on perceived climate change risks. *Nature Climate Change*, 2, 732–735.]

*heuristic = a quick but potentially inaccurate decision-making process

Questions 1 – 9 refer to Text I.

1. According to CCT, which of the following could explain our beliefs about climate change?
   a. We tend to believe the same things as the group we belong to.
   b. We do not trust information which comes from authority.
   c. We make conclusions from evidence we gain from science literature.
   d. Education about climate change is limited for some groups.

2. According to SCT, what kind of people are predicted to think that climate change is a serious problem?
   a. people who believe science is challenging
   b. people who see the differences between cultures
   c. people who make decisions using their intuition
   d. people who make effort in their decision making

3. In SCT, which of the following numeracy abilities is most likely to correlate with concern for climate change?
   a. the ability to interpret statistics and graphs
   b. the ability to calculate air temperature using altitude
   c. the ability to measure the amount of rainfall
   d. the ability to help children with their math homework

4. What does the word (1)eschews mean in this context?
   a. ignores
   b. evaluates
   c. rejects
   d. connects

5. According to the conclusions by the author, what kind of people think climate change is a serious problem?
   a. people who cannot assess scientific information
   b. people who make rapid intuitive judgements
   c. people who are hierarchical in nature
   d. people who are egalitarian in nature

6. In paragraph [10] why is the finding insufficient to demonstrate that SCT is less supportable than CCT?
   a. People who make judgements based on cultural group membership have more scientific knowledge.
   b. People who are in positions of authority are also the ones who make decisions about the science curriculums.
   c. People who make decisions intuitively are more likely to accept the beliefs of the group they belong to.
   d. People concerned with climate change risks are more likely to be suspicious of commerce and industry.

7. Which of the theories does the data from this study support?
   a. both SCT and CCT
   b. neither SCT nor CCT
   c. CCT only
   d. SCT only

8. Based on the results, which is the best way to increase the acceptance of the seriousness of climate change risk?
   a. Teach people the importance of collective attention to individual needs.
   b. Have more personal experience of problems caused by climate change.
   c. Elect politicians who promise to regulate companies causing environmental damage.
   d. Develop educational materials demonstrating the effects of climate change.

9. Which of the following paragraph arrangements best shows how Text I is organized?
   a. [1][2] – [3][4] – [5][6][7] – [8][9] – [10][11][12]
   b. [1][2][3][4] – [5][6][7][8] – [9][10][11][12]
   c. [1][2][3] – [4][5][6][7] – [8][9] – [10][11][12]
   d. [1][2][3][4][5] – [6][7] – [8][9][10] – [11][12]

Text II

Although "identity-protective" cognition is certainly a real process, the extent to which true attitude polarization occurs in response to "mixed evidence" is vastly overestimated. For example, consider the prediction that highlighting scientific consensus will only further public disagreement over important science issues. A substantial number of studies in the context of climate change have actually shown that communicating the scientific consensus on human-caused climate change does the opposite; it neutralizes polarizing worldviews for most people.

Conservatives and liberals may prioritize their values differently based on their group membership, but this does not mean that they always view one another's values in a negative light. Furthermore, categorizing every member of society along a "hierarchical-individualist" or "egalitarian-communitarian" dimension seems unnecessarily restrictive. This is especially true considering the fact that other research has shown that on certain science issues, such as biotechnology and climate change, many different "publics" exist. For example, in the context of climate change, at least six different audiences have been identified, each with their own set of beliefs, values, attitudes, and behaviors. Note that these audiences are not seen as culturally distinct, but instead, they are generally regarded as different "interpretive communities" within the same culture.

It is entirely reasonable that groups on either extreme of the spectrum are motivated to reject scientific information that challenges their deeply held values and beliefs. But what about the big middle? Attitude polarization can certainly be "created" by contrasting the beliefs of the two extremes, but this is unlikely to be an accurate characterization of the public at large. Indeed, recent research has suggested that science polarization may be due to other factors, such as selective exposure to partisan media.

[Adapted from van der Linder, S. (2016). A conceptual critique of the Cultural Cognition Thesis. *Science Communication*, 38, 128–138.]

Questions 10 – 12 refer to Texts I and II.

10. Based on Text II, which of the following would be the best way to reduce polarization between different "publics"?
    a. highlight differences between scientists
    b. encourage people to use various media sources
    c. distinguish the number of "publics"
    d. educate extremists about cultural values

11. What is the relationship between Text I and Text II?
    a. Text II agrees with the ideas presented in Text I, and offers further supporting evidence.
    b. Text II criticizes Text I, and completely rejects the points made in Text I.
    c. Text II acknowledges the points made in Text I, but suggests other factors are also important.
    d. Text II explains the arguments made in Text I, and supports polarizing worldviews.

12. For which of the following points do the authors of Text I and the authors of Text II present contradictory information?
    a. whether increasing scientific literacy/knowledge of scientific consensus increases polarization
    b. the difference between the views of hierarchical-individualists and egalitarian-communitarians
    c. the relationship between the type of reasoning system used and the conclusions drawn
    d. the connection between the number of publics/communities and the beliefs held by the extremes

Text III

Political divisions on climate issues extend far beyond beliefs about whether climate change is occurring and whether humans are playing a role, according to a new, in-depth survey by Pew Research Center. When it comes to party divides, the biggest gaps on climate policy and climate science are between those at the ends of the political spectrum. Across the board, from possible causes to who should be the one to sort this all out, liberal Democrats and conservative Republicans see climate-related matters through vastly different lenses. Liberal Democrats, more than any other party/ideology group, perceive widespread consensus among climate scientists about the causes of warming. Only 16% of conservative Republicans say almost all scientists agree on this, compared with 55% of liberal Democrats.

One thing that doesn't strongly influence opinion on climate issues, perhaps surprisingly, is one's level of general scientific literacy. According to the survey, the effects of having higher, medium or lower scores on a nine-item index of science knowledge tend to be modest and are only sometimes related to people's views about climate change and

climate scientists, especially in comparison with party, ideology and concern about the issue. But, the role of science knowledge in people's beliefs about climate matters is varied and where a relationship occurs, it is complex.

[Adapted from Funk, C. and Kennedy, B. (2016). The politics of climate. Pew Research Center. https://www.pewresearch.org/science/2016/10/04/the-politics-of-climate/]

13. How can the gap between conservative Republicans and liberal Democrats mentioned in Text III be bridged according to the author of Text II?
    a. by showing the existence of different "publics"
    b. by highlighting scientific consensus
    c. by increasing literacy in all communities
    d. by explaining the views of each group

14. Which author's position is consistent with the first sentence of the second paragraph of Text III?
    a. only the author of Text I
    b. only the author of Text II
    c. the authors of both Text I and Text II
    d. neither the authors of Text I nor Text II

15. Based on the information in Text I and Text II, what kind of people are liberal Democrats?
    a. system 1 judgers
    b. system 2 judgers
    c. hierarchical individualists
    d. egalitarian communitarians

Part II. Read the passage and rearrange the seven words in 1 – 5 in the correct order. Then choose from a – d the option that contains the third and fifth words.

The occurrence of the simplest genuine arithmetical activities known from recent nonliterate cultures date back to the Late Neolithic and the Early Bronze Age. These activities $_1$(aiming / and / at / control / identification / of / the) quantities are based on structured and standardized systems of symbols representing objects. Their emergence as counting and $_2$(a / been / consequence / have / may / tallying / techniques) of sedentariness. Symbols are the most simple tools for the construction of one-to-one correspondences in counting and tallying that can be transmitted from generation to generation. The organization of agricultural cultivation, animal domestication, and household administration apparently $_3$(conditions / led / made / social / symbolic / that / to) techniques useful and their systematic transmission and development possible. Such techniques are 'proto-arithmetical' insofar as the symbols represent objects and not 'numbers', and consequently are not used for symbolic transformations which correspond to such arithmetical operations as addition and multiplication.

Early explorers and $_4$(cultures / encountering / indigenous / techniques / these / travelers / using) often interpreted their activities from a modern numerical perspective and believed the limitations of proto-arithmetic results from deficient mental abilities of such peoples. It was only in the first half of the twentieth century that anthropologists and psychologists challenged these beliefs and $_5$(began / connected / constructions / mental / specific / study / to) with proto-arithmetical activities seriously.

[Adapted from Damerow, P. (2001). Number systems, evolution of. In *International Encyclopedia of the Social and Behavioral Sciences.* Vol. 16, Pergamon Press, pp. 10753–10756.]

※ページ下部に出典を追記しております。

1.	a. 3rd: at 5th: control	b. 3rd: identification 5th: at	c. 3rd: the 5th: and	d. 3rd: identification 5th: aiming
2.	a. 3rd: techniques 5th: consequence	b. 3rd: may 5th: been	c. 3rd: have 5th: a	d. 3rd: techniques 5th: tallying
3.	a. 3rd: led 5th: conditions	b. 3rd: made 5th: symbolic	c. 3rd: social 5th: that	d. 3rd: to 5th: conditions
4.	a. 3rd: indigenous 5th: using	b. 3rd: these 5th: techniques	c. 3rd: encountering 5th: cultures	d. 3rd: travelers 5th: these
5.	a. 3rd: study 5th: mental	b. 3rd: specific 5th: study	c. 3rd: to 5th: connected	d. 3rd: constructions 5th: specific

Part III. Answer the questions in Sections A and B.

Section A: Read the text and choose the best option from a – d for questions 1 – 6.

※この部分は、著作権の関係により掲載ができません。

[Adapted from Huntington, S. P. (1996). *The Clash of Civilizations*, FreePress, pp. 30–31.]

1. Which of the blanks i, ii, iii, and iv can be filled with the article "A/a" or "An/an"?
   a. i and iv only b. ii and iii only c. i, ii, and iv only d. ii, iii, and iv only

2. Which of the following best fits in the two blanks labeled A?
   a. therefore b. however c. in other words d. as expected

3. Which of the following has the same meaning as the word (1)secondary as used in the text?
   a. temporary b. second place c. public d. minor

4. Which of the following best fits in the blank labeled B?
   a. unrelated b. transportation c. major d. alternative

5. Which of the following best fits in the blank labeled C?
   a. people b. we c. they d. accidents

6. Which of the following best fits in the two blanks labeled D?
   a. abstraction b. models c. transportation d. reality

Section B: The five paragraphs [A] – [E] below make up a passage but are not properly ordered. Moreover, the five sentences (1) – (6) in paragraph [A] are not properly ordered, either. Read the entire passage and choose the best option from a – d for questions 7 and 8.

[A]

[B]

※この部分は、著作権の関係により掲載ができません。

[C]

[D]

[E]

[Adapted from Valtierra, N. *et al.* (2022). Microscopic modifications produced by mechanical cleaning interventions on archaeological bone. *Journal of Cultural Heritage*, 55, 107–116.]

7. Which of the following shows the best (most coherent) sentence order for paragraph [A]?
   a. 6 – 3 – 5 – 2 – 1 – 4 b. 2 – 1 – 6 – 3 – 5 – 4 c. 2 – 6 – 3 – 5 – 1 – 4 d. 6 – 2 – 1 – 5 – 3 – 4

8. Which of the following shows the best (most coherent) paragraph order for the passage?
   a. A – C – D – B – E b. C – A – B – D – E c. B – E – D – C – A d. C – A – E – B – D

Part IV. Answer the questions in Sections A and B.

Section A: Read the text and choose the best option from a – d for questions 1 – 5.

"Survivor bias" is a logical fallacy that occurs when a conclusion is drawn based on only the properties of the subset of a population that meets a particular condition, or "survives", without considering whether the other members of the population (i.e., those who do not "survive") share those properties or not.

1. Which of the following is necessary and sufficient for survivor bias to lead someone to a false conclusion?
   a. Survival must be caused by properties only apparent in survivors.
   b. Survival must be caused by properties only apparent in non-survivors.
   c. Survivors and non-survivors must differ with respect to a property relevant to the conclusion.
   d. Survivors and non-survivors must be identical with respect to all properties relevant to the conclusion.

Question 2 – 5 refer to the following additional text.

※この部分は、著作権の関係により掲載ができません。

[Adapted from Bohnet, I. (2016). *What works: Gender equality by design*. The Belknap Press of Harvard University Press, pp. 29–30.]

2. According to the passage, which of the following is/are true?
   I. Workers who have experience with female leaders rate them similarly to male leaders.
   II. The gender gap in leadership is caused by a bias against women.
   III. We do not have sufficient experience to make appropriate judgements about female leaders.

   a. I only b. II only c. I and II only d. I, II, and III

3. Which is most likely to be the "missing evidence" suggested by the phrase (1)hardly based on evidence?
   a. men in leadership positions b. men in non-leadership positions
   c. women in leadership positions d. women in non-leadership positions

4. Why do the stereotypes associated with leadership fit represent an example of survivor bias?
   a. They fail to take into account men who are good managers.
   b. They fail to take into account men who are bad managers.
   c. They fail to take into account men who think women are good managers.
   d. They fail to take into account men who are exposed to female leaders.

5. Which of the following examples best illustrates survivor bias?
   a. Asking successful athletes about what steps they took to become successful.
   b. Concluding a medicine works because all of the patients it was tested on recovered.
   c. Eating only the delicious looking grapes, and throwing out the rotten looking ones.
   d. Deciding that healthier members of a group are more likely to survive.

Section B: Read the text and the figure and choose the best option from a – d for questions 6 – 10.

Assume a waterway has two sources of pollution (each emitting 100 tons per year but with different abatement costs) that cause environmental damage. For each source i, the total current emitted pollution (EP_i) is equal to the pollution removed or abated (A_i) and the pollution remaining (P_i). The social objective is to minimize the sum of damage costs from pollution plus the cost of abating that damage by reducing pollution. The social objective can be determined by using the function which sums of the cost of damage from pollution plus the cost of abating that

damage subject to the constraint on total emitted pollution:

$$W(P,A) = \Sigma a_i A_i^2 + d(\Sigma P_i)^2$$

where $W(P,A)$ is a pollutant-dependent social cost function, $a_i A_i^2$ is the total abatement cost at source i for removing A_i units of pollution, and $d(\Sigma P_i)^2$ is the monetary value of environmental damage caused by the remaining pollution from each source i. The quadratic form for abatement cost at each source is chosen for simplicity. It also reflects the general view that (1)as one moves from primary to secondary to tertiary methods to remove more of a pollutant, the cost per unit of pollutant removed increases at an increasing rate. Similarly, the modeling of damages as a quadratic function is chosen for simplicity, but it conveys the general view that the amount of damage caused by a pollutant increases at an increasing rate with the amount of pollution.

This concept is illustrated in **Figure 1**, where a_1 = \$1, a_2 = \$1.5, and d = \$2. The optimum level of pollution abatement occurs where the sum of total abatement plus damage costs is a minimum (**Figure 1**). The optimal solution calls for the abatement of 154 tons.

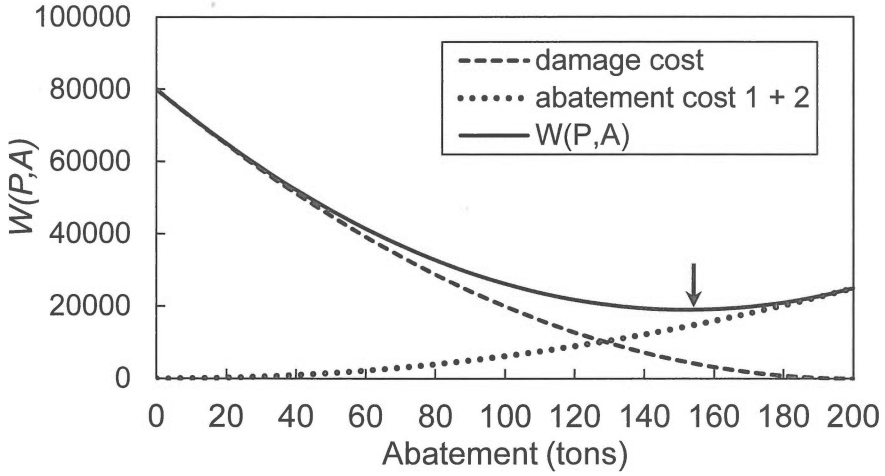

Figure 1

[Adapted from Bosch, D. J., Ogg, C., Osei, E., & Stoecker, A. L. (2006). Economic models for TMDL assessment and implementation. *Transactions of the ASABE*, 49, 1051–1065.]

※Used with permission.

6. According to the text, which of the following should be minimized to achieve the social objective?
   a. the social cost
   b. the cost of removing pollution
   c. the methods of abatement used
   d. pollution emissions

7. How is the view that (1)as one moves from primary to secondary to tertiary methods to remove more of a pollutant, the cost per unit of pollutant removed increases at an increasing rate reflected in the equation?
   a. The environmental damage is quadratic.
   b. The abatement costs are summed.
   c. The amount of pollution removed is squared.
   d. The pollution dependent function is minimized.

8. What is the best title for **Figure 1**?
   a. The cost of environmental damages in a waterway
   b. The social costs of pollution in a waterway
   c. Reducing the costs of pollution abatement
   d. The environmental cost of polluting a waterway

9. What does the point on the solid line in **Figure 1** indicated by the arrow represent?
   a. the cost of optimal pollution abatement
   b. minimal pollution abatement cost
   c. the inability to determine pollution costs
   d. the minimum damage cost

10. What does the *W(P,A)* solid line in **Figure 1** represent?
   a. the sum of the costs to society caused by removing all pollution from the waterway
   b. the sum of the costs of removing some of the pollution and leaving the rest
   c. the sum of the costs of modeling the damages to the environment
   d. the sum of the costs required to keep the environment protected

Part V

Section A: For questions 1 – 10, two definitions are given with one sample sentence each. Think of a word that matches both definitions and also fits in the blanks in both sentences. Convert each letter of the word into a number 1 to 4 according to the table below: number 1 represents letters *a* – *g*, 2 represents *h* – *m*, 3 represents *n* – *s*, and 4 represents *t* – *z*. Then choose the matching sequence of numbers from options a – d. For example, if the word you think is *wise*, for which the letter *w* is given, the remaining letters would be changed into 2 for *i*, 3 for *s*, and 1 for *e*. Hence, the correct answer would be *w*231.

Number	Letters
1	a, b, c, d, e, f, g
2	h, i, j, k, l, m
3	n, o, p, q, r, s
4	t, u, v, w, x, y, z

1. (i) an adaptation of music for different instruments than it was originally written for: The *a*_____ of the heavy metal song for string quartet was interesting.
   (ii) an agreement between two people or groups: The young couple's living *a*_____ disturbed their traditional parents.
   a. *a*331342134 b. *a*3313112134 c. *a*13112134 d. *a*112142134

2. (i) to be supported strongly with evidence: The theory was not *g*_____ in reality.
   (ii) to make an electrical connection with the earth: The laboratory equipment needs to be *g*_____.
   a. *g*2334 b. *g*42111 c. *g*13421 d. *g*3343111

3. (i) a continuous decrease in number, value, or quality: The transition from adolescence to adulthood is accompanied by a *d*_____ in physical activity.
   (ii) to politely refuse to accept to do something: When 22 years old, Hertz originally *d*_____*d* the invitation from Helmholtz to prove that radio waves existed.
   a. *d*43231 b. *d*31123 c. *d*112231 d. *d*313421

4. (i) a thing that is used to transport people or goods: Many studies investigated the effects of starting and stopping on fuel consumption and *v*_____ exhaust emissions.
   (ii) a way of achieving something: Sports can be seen as a *v*_____ for acquiring life skills.
   a. *v*24121 b. *v*122121 c. *v*2124121 d. *v*1422121

5. (i) the direction in which an object faces: Stacking interactions between planes will increase as they adopt a parallel *o*_____.
   (ii) a person's basic beliefs or reactions towards a particular subject: People with common lifestyle *o*_____*s* may form strong social networks.
   a. *o*2244233 b. *o*3213414233 c. *o*31132414233 d. *o*1413414233

6. (i) having a very sharp edge or point: The edge of the knife was *k*_____.
   (ii) full of excitement or desire: The students were *k*_____ to start the experiments.
   a. *k*113 b. *k*23124 c. *k*334231 d. *k*413442

7. (i) selective or choosy: Sam was very *p*_____ about what foods he would eat.
   (ii) an object considered separately from the rest: That *p*_____ painting was painted in 1785.
   a. *p*2124 b. *p*3311332312 c. *p*134214213 d. *p*432413

8. (i) exposed by having the skin removed; inflamed and painful: Her hands were *r*_____ from hard work.
   (ii) uncooked, unprocessed, or unrefined: Some people refuse to eat *r*_____ fish.
   a. *r*14 b. *r*131 c. *r*34413 d. *r*334

9. (i) to prove that something is true or useful: The model has been *v*_____*ated* with experimental evidence.
   (ii) not obsolete or expired yet: This ticket is still *v*_____ until the end of the year.
   a. *v*1221 b. *v*132111 c. *v*13432111 d. *v*134111

10. (i) of or inside a particular country: Solar panels are expected to alleviate the *d*_____ power demand and decrease the dependency on nuclear plants.
    (ii) connected to home or family: Wetlands serve as a source of water for *d*_____ and commercial purposes.
    a. *d*31413 b. *d*224423 c. *d*3213421 d. *d*2344311311

Section B: For questions 11 – 15, two sentences are given. Choose the word from options a – d that best fills the blanks of both sentences.

11. (i) The empirical nature of research means that it is conducted following _____ scientific methods and procedures.
    (ii) Our approach to raising standards for all children will remain absolutely _____.
    a. colonial b. rigorous c. instructional d. ambiguous

12. (i) The cornea is a transparent _____ that covers the front of the eye.
    (ii) Loud noise can damage the _____ in the ear.
    a. arch b. foliage c. membrane d. sensor

13. (i) A global solution is to make a simple text editor, not Excel, the _____ program with which to open these files.
    (ii) As they had not made their loan repayments for the past three months, the bank considered them to be in _____.
    a. residual b. default c. libel d. latent

14. (i) In 1885 European leaders met to divide Africa and drew up _____ borders that exist to this day.
    (ii) An enactment protects tenants against _____ treatment at the hands of landlords with respect to raising of rents.
    a. vibrant b. composite c. sentimental d. arbitrary

15. (i) We live in a materialistic age where there seems to be a growing _____ with money.
    (ii) Allow your children to use the computer occasionally, but do not let it become a(n) _____.
    a. disposition b. parameter c. rebellion d. obsession

End of Exam