

令和 2 年度前期日程入学試験学力検査問題

令和 2 年 2 月 25 日

外 国 語 (英語)

志望学部	試 験 科 目	試 験 時 間
経済学部, 理学部, 医学部保健学科, 歯学部, 薬学部, 工学部, 農学部	英語	10 : 00 ~ 11 : 40 (100 分)
文学部, 教育学部, 法学部, 医学部医学科	英語, ドイツ語, フランス語のうち から 1 科目選択	

- ・ドイツ語, フランス語の問題冊子は, 出願時に, それぞれの科目を希望した者に配付します。

注 意 事 項

1. 試験開始の合図があるまで, この問題冊子, 解答用紙を開いてはいけない。
2. この問題冊子は, 18 ページである。問題冊子の白紙のページや問題の余白は草案のために使用してよい。なお, ページの脱落, 印刷不鮮明の箇所などがあった場合には申し出ること。
3. 解答は, 必ず黒鉛筆(シャープペンシルも可)で記入し, ボールペン・万年筆などを使用してはいけない。
4. 解答用紙の受験記号番号欄(1 枚につき 2 か所)には, 忘れずに受験票と同じ受験記号番号をはっきりと判読できるように記入すること。
5. 解答は, 必ず解答用紙の指定された箇所に記入すること。
6. 解答用紙を持ち帰ってはいけない。
7. 試験終了後, この問題冊子は持ち帰ること。

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——このページは白紙——

I 次の英文を読み、下の問いに答えなさい。

The English Renaissance philosopher, politician, and scientist Francis Bacon is widely credited with establishing the fundamentals of the experimental method in science. 'The best demonstration by far is experience, if it go not beyond the actual experiment,' he wrote in his book *Novum Organum*. Bacon showed in words how science proceeds by trial and error, and in deed how some of its errors prove to be fatal. Travelling by coach and horse with one of the king's physicians to Highgate in London, it suddenly occurred to Bacon that the snow lying all around him might be as effective as salt at preserving flesh. Desiring to test the theory without delay, the pair went into a poor woman's house at the bottom of Highgate Hill, bought a hen off her which they got her to *eviscerate, and then stuffed it with snow. In the process, however, Bacon caught such a sudden and extreme chill that he couldn't even make it home. The Earl of Arundel, who lived locally, put him up but unfortunately in a damp bed that did more harm than good. A few days later, he died of pneumonia.

Given that Bacon helped establish the *empirical principle that conclusions should be grounded in evidence, it is ironic this well-known story about him is probably untrue. The irony, however, goes deeper than that. Bacon's supposed cause of death exemplifies the difficulties of taking a scientific, evidence-based approach in the first place. Folk wisdom has for centuries insisted that it is possible to 'catch a chill'. But when modern science examined the evidence for this, it seemed to be no more than a superstition. A number of laboratory experiments introduced cold viruses into people's noses, exposing some to cold air and others not, and they repeatedly showed that the temperature had no effect at all. The reason for this seemed simple enough: the common cold is caused by *rhinoviruses, flu by influenza viruses, pneumonia by bacteria. Temperature has nothing to do with it. If you get extremely cold for too long you can get *hypothermia, but you can't 'catch a chill'.

Then in January 2015, headlines like ‘Mom Was Right: You’ll Catch a Cold from Being Cold’ appeared in serious newspapers and magazines. A team at Yale University led by Ellen F. Foxman had found that ‘the innate immune response to the rhinovirus is impaired at the lower body temperature compared to the core body temperature.’⁽²⁾ In other words, whether the cold virus is present in your nose does not depend on the temperature, but your immune response to it does, and that means you may indeed be more likely to catch a cold if you get cold: or rather, more likely to *develop* a cold if your nose has already caught the virus.

^(B) These examples don’t look like good evidence for the reliability of evidence-based truth. We are left without enough evidence to reach firm and final conclusions both on an historical question about the cause of a particular death and a scientific question about causes of deaths in general. We seek evidence but often, perhaps usually, it is elusive, absent, ambiguous and inconclusive. *Etymologically, empirical means ‘from experience’, and experience seems to be telling us that an empirical approach leaves us with uncertainty, rather than knowledge.

Far from being a weakness, however, the open-endedness of empirical inquiry^(C) is actually its strength. David Hume made this point wonderfully when he observed that ‘all the objects of human reason or inquiry may naturally be divided into two kinds, namely, Relations of Ideas, and Matters of Fact.’ Relations of ideas concern truths of mathematics, geometry, and pure logic. Such truths are, in effect, true by definition, but they tell us nothing about the real world. Matters of fact, in contrast, cannot be established by pure logic. That also means they cannot be established with 100 percent certainty. ‘The contrary of every matter of fact is still possible,’ warned Hume. ‘That the sun will not rise tomorrow is no less intelligible a proposition, and implies no more contradiction than the affirmation, that it will rise.’⁽³⁾ Indeed, we can easily imagine circumstances in which we would have to accept that the sun is unlikely to rise

tomorrow, such as if a massive asteroid were about to hit the Earth.

A lack of certainty is therefore part of the deal with empirical truth. We need to give up on it in order to take up the possibility of knowledge of the world. Absolute certainties can only be obtained about purely conceptual matters, such as *axioms of mathematics and laws of logic. If we want to know about the world then there is potentially no end of discoveries — for ourselves or the entire human race — that might force us to alter our opinions. What we hold to be true is constantly open to being tested, which makes the truths that pass the test more reliable. The strength of empirical truth resides in the fact that it is always open to scrutiny, revision and rejection.

(4)
(Adapted from Julian Baggini, “Empirical Truth,” in *A Short History of Truth: Consolations for a Post-Truth World*)

(注)

*eviscerate 動物の内臓を抜く

*empirical 実証的な

*rhinoviruses ライノウイルス(風邪を引き起こすウイルスの一種)

*hypothermia 低体温症

*etymologically 語源的には

*axioms 公理

問 1 下線部(A)が指す内容を日本語で説明しなさい。

問 2 下線部(B)は具体的にどのようなことを意味しているか、本文に即して日本語で説明しなさい。

問 3 下線部(C)は具体的にどのようなことを意味しているか、本文に即して日本語で説明しなさい。

問 4 下線部 (D) を日本語に訳しなさい。

問 5 下線部 (1)~(4) の意味として最も適切なものを、それぞれ与えられた選択肢から選び、記号で答えなさい。

- | | | |
|------------------|--------------------|-------------------|
| (1) damp | (ア) cold | (イ) dusty |
| | (ウ) moist | (エ) uncomfortable |
| (2) impaired | (ア) intoxicated | (イ) weakened |
| | (ウ) lacking | (エ) bruised |
| (3) intelligible | (ア) comprehensible | (イ) evident |
| | (ウ) irrational | (エ) inexplicable |
| (4) scrutiny | (ア) persuasion | (イ) investment |
| | (ウ) acceptance | (エ) inspection |

II 次の英文を読み、下の問いに答えなさい。

The advance of consumer technology has been nothing short of breathtaking—even if we don't always recognize it. What's more, the introduction of consumer electronics—and in recent years powerful computational capabilities built into devices—has profoundly changed the way we watch movies and television, communicate, shop for goods, gather information, and navigate a huge amount of other tasks. It's safe to say that the world is a much better place as a result of technology innovation. It has delivered leisure time and helped drive societal gains. It has made our machines and cars safer, our medicine better, and created comforts that past generations could only dream about.

Some sociologists and cultural anthropologists, including Alvin Toffler and Daniel Bell, have advanced the idea that we're heading into a postindustrial age that places an emphasis on information and services rather than the mere consumption and use of goods. There's plenty of evidence to support this notion.
(A)

(B)

What's more, a growing percentage of individuals with smartphones, e-readers, Blue-ray players, and other devices, say that Internet connectivity and the ability to view content—in some cases across multiple devices—is a primary appeal.

(C)

_____ A quarter century ago, the primary way to view a movie was to head to the movie theater and pay cash for each ticket. Today we purchase or rent movies from streaming media players attached to television sets or watch them wirelessly through tablets, smartphones, and

gaming consoles. We view films and listen to music downloads on airplanes and in coffee shops. No less significant: social media reviews and recommendations increasingly influence thinking and buying decisions.

Connected devices translate into connected people — along with entirely different relationships among groups of people. Yet these human connections, however important and profound, are only a piece of the *IoT (Internet of Things) puzzle. An individual device or thing connected to the Internet increases the power of that particular device — and often adds substantial value for the person using it. However, the ability to connect devices into a vast network — essentially the Internet of Things — rapidly increases the possibilities and capabilities.

For instance, a light switch that is Internet enabled not only allows a ^(D)homeowner to program on and off times with a smartphone and manually control it from the same phone, but it also can be connected to software that analyzes electrical consumption across all lights in the house and, by offering recommendations, save money. Scaling up even further, the same data could be used by a *utility to better understand consumption patterns and establish rates and incentives that drive more efficient usage patterns across a customer base. It's not difficult to identify similar possibilities in many other industries, including automobiles, health care, and financial services.

Moreover, attaching *RFID tags and other sensors to various objects and packages introduces remarkable capabilities. Suddenly it's possible for a kitchen cupboard to recognize when the supply of rice or salsa is low. A refrigerator can determine that the bread or butter has run out and it's time to buy more. A bathroom cabinet can alert a homeowner to buy more toilet paper or toothpaste — and even automatically add the items to a shopping list. Then, when the consumer steps into a grocery store and approaches the aisle with the desired product, he or she receives a smartphone alert or message — and perhaps even a coupon.

Of course, a greater number of connected devices translate into more data intersection points — and far more impressive possibilities. Realistically we've only begun to enter the age of connected devices. Although home networks and Wi-Fi have been widely used for more than a decade — and fast cellular connectivity is increasingly common — the platform and infrastructure for supporting all these devices is only now beginning to mature. Too often in the past, various systems and devices did not communicate or play nicely with one another. What's more, without clouds that make sharing and connecting data far less complicated, fast and seamless data sharing simply wasn't possible.

Today the pace of innovation is accelerating rapidly and digital technologies are maturing. As data platforms take hold, analytics advances, clouds become a standard part of information technology, mobile applications grow in power and sophistication, and prices for RFID and other sensors go down, the foundation for the Internet of Things is taking shape. Clearly, our world will never be the same. We are entering a new era that promises to revolutionize everything we do.

(Adapted from Samuel Greengard, *Internet Of Things*)

(注) *IoT(Internet of Things) 様々な装置やセンサーなどがインターネット
に接続され情報交換する仕組み

*utility 電気, ガス, 水道などの供給会社

*RFID tags 情報を埋め込んだタグ

問 1 下線部 (A) が指す内容を、日本語で説明しなさい。

問 2 下線部 (B) に次の (ア)～(エ) の文を入れるとき、それらをどの順序に並べるのが最も適切か、記号で答えなさい。

- (ア) However, the Organization for Economic Cooperation and Development (OECD) estimates that the figure will reach twenty by 2020.
- (イ) According to various market research reports, consumers now have about seven connected devices per household in the United States.
- (ウ) Market research firm NPD Group found that 88 percent of mobile device owners are now aware of home automation systems.
- (エ) What's more, the technology surrounding these devices is increasingly important.

問 3 下線部 (C) に入るもっとも適切な文を、次の (ア)～(エ) の中から 1 つ選び、記号で答えなさい。

- (ア) Connected devices are transforming the way we interact with the world around us, but they don't change the way people think about our society.
- (イ) Connected devices are physical objects that can connect with each other and with other computational systems via the Internet.
- (ウ) Connected devices change the way we think about products and things, and they drive enormous changes in behavior as well.
- (エ) Connected devices have profoundly changed the way movies and televisions are made around the world.

問 4 下線部 (D) を日本語に訳しなさい。

問 5 次の(ア)~(キ)の文から、本文の内容に一致するものを3つ選び、記号で答えなさい。

- (ア) Incredible advances in innovative consumer telemarketing technologies have made automobiles safer, medicines more effective and created comforts that have helped drive societal gains.
- (イ) Our decision about which goods and services to purchase, for example, which movies to watch and which music to listen to, is highly influenced by online reviews.
- (ウ) When a particular device is connected to the Internet, it not only increases its power, it also often makes individual users substantially more valuable.
- (エ) Utilities could also benefit from homeowner consumption data to establish prices, determine consumer motivation and offer customers incentives to improve usage efficiency.
- (オ) RFID tags attached to kitchen and bathroom products in the home can alert consumers by a smartphone message from a store when it's time to go to purchase products that have almost run out — and even perhaps provide the consumer with a coupon.
- (カ) Because, for many years, we've had high-speed Internet and cellular phone connectivity, we have exhausted most of the ways that devices can connect to each other to benefit our lives.
- (キ) The establishment of data platforms, the reduction in the cost of sensors, the creation of sophisticated mobile applications, the improvement of analytics, as well as the standardization of cloud computing, are all shaping the foundation of the Internet of Things.

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III Read the conversation below between Bradley and Kaede and answer questions 1) and 2) at the end of the passage.

Bradley: Gee Kaede, it's been hard adapting to college life in Japan. I've had trouble meeting new people, and other than hanging out with you all the time, I have no social life whatsoever. I spend most of my free time just studying, so I'm thinking of joining a club.

Kaede: Oh yeah, you should. If you join a club, it's guaranteed that you'll socialize more. However, keep in mind, clubs tend to make demands on your free time—not just to hang out—but to push you to excel at the sport, musical instrument or any other activity that each club sponsors. As you know, I'm a member of the equestrian club. I had never ridden a horse before I joined, but after two years and a lot of hard work, I'm a decent horse rider and I have learned a lot about horses. Joining opened up a whole new world to me.

Bradley: But what about socializing?

Kaede: That's the best part. Not only have I learned a fun new sport, but I've also made tons of new friends and received a lot of valuable guidance and advice from my seniors that I've been able to pass on to my juniors. So, I think the time commitment has been worth it.

Bradley: I totally get that. "Club life" in Japan sounds similar to "Greek life" in the US.

Kaede: Eh? "Greek life." What's that?

Bradley: Almost every university in the States has a bunch of social organizations, called fraternities for men and sororities for women that students can join, somewhat like *bukatsu* in Japan.

Kaede: But why is it called "Greek life?"

Bradley: Because each fraternity and sorority is named after letters of the Greek alphabet like, "delta," "sigma," "phi," "omega," and so on. Unlike

clubs in Japan though, there is no particular sport, music or activity associated with them. “Greek life” focuses on the social aspects of friendships, bonding and networking. Just like clubs in Japan, senior members counsel and mentor junior members. However, some “Greek life” organizations can be overly secretive, elitist or exclusive because they only cater to students of particular backgrounds, majors, religions or even races.

① **Kaede:** Oh! I don’t think I’d be accepted into a sorority in that case.

Bradley: Ah, sure, you would! I said some are like that, not all. Many are impartial and openly recruit from all interested students. So, if students really want to join, they can always find a fraternity or sorority that is suitable for them. In any case, I recently saw a study that emphasized that members of “Greek life” had significantly higher school marks than non-members. So, being part of “Greek life” has its academic advantages as well as its social benefits.

Kaede: I see. Do universities operate or control the fraternities? I ask because in Japan, clubs are pretty much student-managed by the *senpai-kōhai* system—that’s the concept of senior members looking after and guiding junior members. But, the system can generate a lot of peer pressure that can sometimes be rather harsh. For example, when I first joined the equestrian club, the only task my seniors allowed me to do was clean out the horse stalls!

Bradley: Hmm, that’s interesting. Anyway, no. “Greek life” is not operated directly by the universities. Each fraternity and sorority is commonly affiliated with a national administrative organization, but they are generally ^② self-governing and student-run locally. Nevertheless, I know what you mean about the *senpai-kōhai* system and misusing authority. Because of a few senior power-harassment problems in the past, university administrators currently monitor “Greek Life” organizations very closely to prevent hazing.

Kaede: Hazing? What’s that?

Bradley: Hazing occurs when seniors organize foolish, over-the-top, initiation tests on juniors. Practical jokes and bothersome tasks are still part of the admission process though. Anyway, I do know what you mean about peer pressure. While you guys were forced to shovel out horse stalls when you first joined your club, when we first joined our fraternity we were all made to wear suits and ties to classes on hot days while all the other students were dressed in their usual ultra casual college clothes — shorts and tee shirts. It was very embarrassing.

Kaede: Ha! That's funny. It seems as though there are some definite similarities between Japanese "club life" and American "Greek life." Say, Bradley! Why don't you join the equestrian club and start engaging in an extremely enjoyable pastime.

Bradley: Thanks for asking. I'm inclined to take you up on your kind invitation, but I'm a little scared of horses so I can't imagine riding one. It is an intriguing idea though because I really like what you said about the social aspects and the friendships that you guys enjoy.

1) For each underlined word or phrase ① to ④ in the conversation above, choose the word or phrase that has the closest meaning. Write the letter (a., b., c., d.) of your choice.

- | | |
|-----------------|------------------|
| ① a. consider | b. refuse |
| c. debate | d. play with |
| ② a. equal with | b. unapproved by |
| c. attached to | d. operated in |
| ③ a. natural | b. excessive |
| c. sensible | d. moderate |
| ④ a. confusing | b. frightening |
| c. imaginary | d. fascinating |

2) Based on the conversation above, answer BOTH (a) and (b) below.

(a) Using full English sentences, write between 50 and 70 words on why Bradley might want to join the equestrian club. Give at least three reasons discussed in the conversation. Indicate the number of words you have written at the end of the composition.

(b) Using full English sentences, write between 50 and 70 words on why Bradley might **NOT** want to join the equestrian club. Give at least three reasons discussed in the conversation. Indicate the number of words you have written at the end of the composition.

IV 次の文章を読み、下線部 (A), (B) を英語に訳しなさい。

私たちには、どこか純粋に限界というものに挑戦したいという願望がある。もし、人間の全細胞数という未知の〈知〉があるのであれば、何とかしてそれを知りたい。知の限界があるのであれば、それを乗り越えたい。そんな願望は、何としても 100 メートルで 10 秒を切りたいという欲求とどこかで通じていないだろうか。多くの人たちが、誰が 10 秒の壁を破れるかにわくわくしてきたが、10 秒を 0.01 秒でも切ることが、いったい何の役に立つのか、そんな問いを発する人は少なかったはずである。

誰もまだ到達したことのない未知の世界を究めてみたい、美術、音楽などの芸術
(A) の世界から芸能の世界まで、そんな純粋な欲求が「文化」を支えている。 スポーツを含めて文化というものが、何の役に立つかという観点から論じられることはまずないと言ってもいいだろう。

サイエンティストと呼ばれる一群の人々は、この知の限界に挑戦することを楽し
(B) む人々である。その成果だけでなく、知の限界への挑戦のプロセスそのものを含めて、それが「文化」なのだ。「文化」には役に立つ、立たないの区別は意味を持たない。役に立たなくとも、そんな「知りたいという欲求」を「文化」として支援してゆくシステムが必須である。

(永田和宏「〈知〉の限界を楽しむ心」『京都新聞』 2017 年 10 月 15 日より)