

情報科学部A方式

1 限 英 語 (90分)

〈注意事項〉

1. 試験開始の合図があるまで、問題冊子を開かないこと。
2. 解答はすべて解答用紙に記入しなさい。
3. マークシート解答方法については以下の注意事項を読みなさい。

マークシート解答方法についての注意

マークシート解答では、鉛筆でマークしたものを機械が直接読みとって採点する。したがって解答はHBの黒鉛筆でマークすること(万年筆、ボールペン、シャープペンシルなどを使用しないこと)。

記入上の注意

1. 記入例 解答を3にマークする場合。

(1) 正しいマークの例



(2) 悪いマークの例



枠外にはみださないこと。

○でかこまないこと。

2. 解答を訂正する場合は、消しゴムでよく消してから、あらためてマークすること。
3. 解答用紙をよごしたり、折りまげたりしないこと。
4. 問題に指定された数よりも多くマークしないこと。

問1 次の単語の組(1)~(5)において、アクセントの位置が異なる対を、それぞれ①~④のうちから一つ選べ。

例：① fá-ther hún-gry ② ex-cépt síng-er
 ③ ad-více mis-táke ④ háp-py ór-ange

この例の場合には、②のみが except と singer のアクセントの位置において異なるので、正解は②である。

- (1) ① sau-sage con-trol
 ② sur-prise gui-tar
 ③ Au-gust fa-mous
 ④ mar-riage mush-room
- (2) ① suc-cess pri-vate
 ② ro-bot mo-ment
 ③ ca-reer cam-paign
 ④ rock-et cab-bage
- (3) ① ad-van-tage ba-na-na
 ② cu-cum-ber hu-mor-ous
 ③ at-mos-phere rec-om-mend
 ④ po-et-ry man-ag-er
- (4) ① char-ac-ter in-no-cent
 ② fi-nan-cial mag-net-ic
 ③ par-ti-cle fan-ta-sy
 ④ but-ter-fly mos-qui-to
- (5) ① ap-pre-ci-ate dem-o-cratic
 ② vol-un-ta-ry el-e-va-tor
 ③ ma-te-ri-al com-mu-ni-cate
 ④ e-co-nom-ic com-pu-ta-tion

the rest of the world so we can surprise them with a dramatic increase in value over what they're getting today. This transformation in value— (3) it is through a product, service, business model, or process—is what I refer (4) as a *business breakthrough* throughout the book. Actually, these types of breakthrough are equally (5) to nonbusiness organizations.

My message is simple:

- Business breakthroughs deliver surprise. Our brains are built to (6) positive surprise. Great ideas surprise us with a strong dose of remarkable newness in ways that add value to our lives and challenge our assumptions (7) what we thought possible.
- Surprises are strategic (8) that drive breakthroughs. By seeking out and using surprises as “guiding principles”, we can gain new vision, generate ideas, and (9) new directions for ourselves and our organizations.
- Business breakthroughs transform people and organizations. Breakthrough business success doesn't simply result from a great idea. It involves a challenging and transformative journey through deep uncertainty, unpredicted events, and (10) failures in order to come out on the other side to achieve business breakthroughs.

*1 leapfrog : 先んじる, (飛び越して)優位に立つ

*2 breakthrough : 大発見, 躍進, 打破

- | | | |
|----------------|--------------|--------------|
| ① whether | ② overcoming | ③ appreciate |
| ④ expectations | ⑤ about | ⑥ tools |
| ⑦ applicable | ⑧ to | ⑨ inevitable |
| ⑩ discover | | |

問4 次の文章を読んで、(1)から(5)の空欄に入れるのに最も適切なものを、それぞれ①～④のうちから一つ選べ。

Brain, Interrupted

Technology has given us many gifts, among them dozens of new ways to grab our attention. It's hard to talk to a friend without your phone ringing at least once. Just try to type a memo at work without having an e-mail pop up that ruins your chain of thought.

There's a lot of debate among brain researchers about the impact of such devices on our brains. Most discussion has focused on the harmful effects of multitasking. Early results show what most of us know without question: If you do two things at once, both efforts suffer.

In fact, (1). In most situations, the person dealing with e-mail, text messaging, Facebook, and a meeting at the same time is really doing something called "rapid switching between tasks," and is engaged in changing from one context to another and back again.

As economics students know, switching involves costs. But how much? When a consumer switches banks, or a company switches suppliers, it's relatively easy to count the added expense of changes. On the other hand, (2).

We decided to investigate further, and asked Professors Alessandro Acquisti and Eyal Peer at Carnegie Mellon University to design an experiment to measure the brain power lost when someone is interrupted. In the experiment, 136 participants were asked to read a short text and answer questions about it. During an initial test, there were three groups of participants: one merely completed the test. The other two were told they "might be contacted for further instructions" at any moment via instant message. They were interrupted twice. Then a second test was given, but this time, only the second group was interrupted. The third group awaited an interruption that never came. Let's call the three groups *Non-*

interrupted, *Interrupted*, and *On Guard*.

The results of the first and second tests were interesting. During the first test, both interrupted groups answered correctly 20 percent less often than members of the *Non-interrupted* group. Again, in the second test, the *Interrupted* group did not perform as well as the *Non-interrupted* group, but this time . The *On Guard* group's test result was more surprising. The group improved by as much as 43 percent, and even performed better than the *Non-interrupted* group. This unexpected finding requires further research, but Dr. Peer thinks there's a simple explanation: Participants learned from their experience, and their brains made adjustments. Somehow, it seems, , or perhaps the potential for interruptions served as a kind of time limit that helped them focus even better.

It should be noted, however, that according to Clifford Nass, a Stanford University researcher who conducted some of the first tests on multitasking, those who can't resist the temptation of doing two things at once are "people easily tempted to look for something unrelated." It's actually robbing us of brain power, too.

What the Carnegie Mellon study shows, however, is that .

(1)の選択肢

- ① people like to do one task at a time
- ② research has shown the harmful effects of multitasking
- ③ multitasking is not an appropriate term
- ④ it is possible to do many things at the same time

(2)の選択肢

- ① when it comes to the expense, it must be measured based on data
- ② when your brain is switching tasks, the cost is harder to measure
- ③ when you switch tasks, the cost is measured by the risk of brain power loss
- ④ when changing contexts involves costs, it is important to know how much

(3)の選択肢

- ① they widened the gap to 25 percent
- ② they bridged the gap in the first and second tests
- ③ they left a gap to be filled in the third test
- ④ they narrowed the gap to 14 percent

(4)の選択肢

- ① they were tempted to do many things at once and gained brain power
- ② they multiplied their brain power because they coped with many interruptions
- ③ they were robbed of brain power by being in the habit of multitasking
- ④ they generated extra brain power to prepare themselves against interruption

(5)の選択肢

- ① it is possible to train yourself for interruptions, even if you don't know when they'll occur
- ② as multitasking is a current trend among us today, it is wise to receive training in focusing on multiple things
- ③ we should be careful not to do multitasking because it would eventually rob us of brain power
- ④ your brain cannot cope with interruptions, so keep them to a minimum when you study

問5 適切な英文になるように選択肢を並べ替えたとき、空欄 (ア) ~ (シ) に入る語句をそれぞれ①~⑤のうちから一つずつ選べ。

- (1) I am glad (ア) (イ) my results.
① I can discuss ② to have ③ a friend
④ whom ⑤ with
- (2) He (ウ) (エ) .
① his pockets ② for ③ searching
④ the key ⑤ was
- (3) I am afraid (オ) (カ) .
① to understand ② you ③ might not
④ help ⑤ she
- (4) I find (キ) (ク) .
① to ② answer ③ this question
④ somewhat ⑤ difficult
- (5) I thought it (ケ) (コ) my home.
① enter ② best ③ not to
④ let ⑤ them
- (6) Can't you see (カ) (シ) for me?
① this ② a terrible ③ thing
④ what ⑤ is

問6 次の会話(1)から(5)の空欄に入れるのに最も適切なものを、それぞれ①～④のうちから一つ選べ。

(1) Brad: Hey, Jake, are you coming on Saturday?

Jake: You mean, to the barbecue, right?

Brad: Yeah, that's right. You are coming, aren't you?

Jake: I'm afraid . I've got to go to baseball practice.

- ① I can't help it
- ② I can't take it
- ③ I can't make it
- ④ I can't stand it

(2) Liz: Would you like something to drink?

Karen: I'd love a glass of orange juice.

Liz: Sorry, I don't have any orange juice. Is grapefruit juice OK?

Karen: Yes, .

- ① here you go
- ② that's the one
- ③ that'll do
- ④ you're right

(3) Bill: Gosh, this table's heavy.

Jeff: Here, let me .

Bill: Oh, that's very kind of you.

Jeff: No problem. Where do you want to put it?

- ① take it easy
- ② get the hang of it
- ③ give you a hand
- ④ put up with it

(4) Naomi: What's this? *Dutch for Beginners*? Why are you learning Dutch?

Paul: I'm going to Amsterdam in the summer, so I need to learn a few words.

Naomi: ? Everybody in Holland speaks English.

Paul: No, they don't!

- ① What's wrong
- ② What's it about
- ③ What's up
- ④ What's the point

(5) Yuji: Do you want to go to the Arashi concert tomorrow? I've got a spare ticket.

Sara: Tomorrow? I'm not sure. I'm a bit busy at the moment.

Yuji: Oh, well, . You don't have to go if you don't want to.

- ① it's up to you
- ② give me a break
- ③ hold it
- ④ there's nothing to it

問7 無線と有線の高速回線の各国の加入者数の変化を調べた報告である。次の文章と図1、図2を参考に問いに答えよ。

Throughout much of the world, growth in wired broadband connections*¹ is slowing. In some countries the market appears to have peaked at around 30 to 35 subscriptions per 100 people. In other countries the number of subscriptions has even decreased. However, this is not so for wireless broadband*², according to the latest numbers released by the Organization for Economic Co-operation and Development (OECD)*³, which include data collected up to June 2012.

Figure 1 shows the numbers of wired and wireless broadband subscriptions per 100 people in each of ten OECD countries and the average in all OECD countries. Figure 2 shows the OECD wired broadband subscription rates from 2002 to 2012.

The United States has long been behind other countries in the rate of broadband subscription. However, it has the highest actual number of broadband subscribers, at 88.5 million. The leading countries in terms of the rate of broadband subscription include many Nordic countries such as Denmark, Finland, Iceland, Norway, and Sweden, reflecting the region's historical strength in mobile telecommunications. South Korea's aggressive increase in the number of its high-speed connections has left other countries racing to catch up. Denmark managed to overtake South Korea in wired broadband, but has since peaked at about 38 subscriptions per 100 people.

*¹ wired broadband connections : 有線高速回線

*² wireless broadband : 無線高速

*³ OECD : 経済協力開発機構

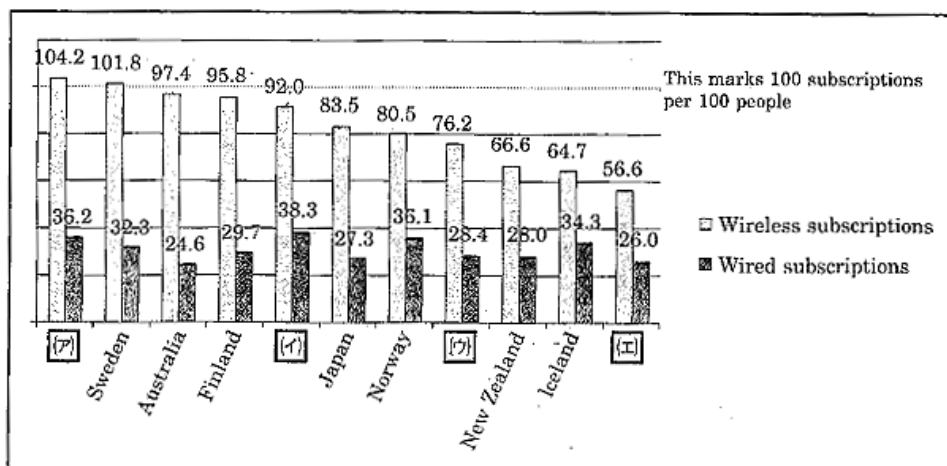


Figure 1. Numbers of wired and wireless subscriptions per 100 people

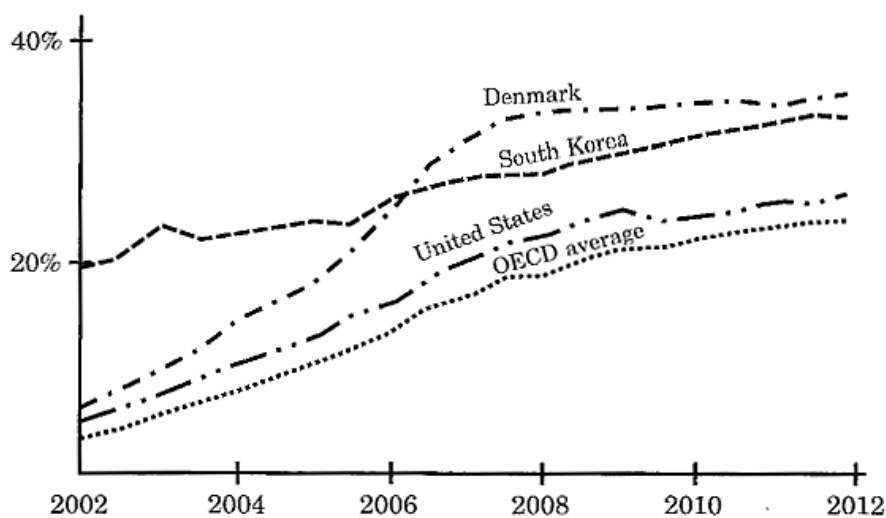


Figure 2. Wired broadband subscription rates in some OECD countries, 2002-2012

- (1) 図1の空欄 [ア] ~ [エ] と、設問A, Bの空欄 [オ] [カ] に入る最も適切なものを、以下の選択肢①~⑪のうちから選べ。

A. The country with the highest ratio of wireless broadband connections to wired broadband connections is [オ] .

B. The country with the lowest ratio of wireless broadband connections to wired broadband connections is [カ] .

- | | | |
|-------------|-----------------|---------------|
| ① Australia | ② Denmark | ③ Finland |
| ④ Iceland | ⑤ Japan | ⑥ New Zealand |
| ⑦ Norway | ⑧ OECD average | ⑨ South Korea |
| ⑩ Sweden | ⑪ United States | |

- (2) 図が表す内容に最も近いものを①~④のうちから一つ選び、記号をマークせよ。

- ① In the United States, from 2002 to 2012, the percentage of broadband subscribers per 100 people was the highest in the world.
- ② Since around 2007, the increase in the percentage of subscribers to wired broadband connections in Denmark has slowed down.
- ③ In South Korea, the rate of subscription to wired broadband connections from 2002 to 2012 was constant.
- ④ In 2008, Denmark overtook South Korea and has since kept the highest percentage of wired broadband connections.

(3) 本文と二つの図が表す内容に最も近いものを①～④のうちから一つ選び、記号をマークせよ。

- ① While the rate of subscription to wired broadband connections has almost stopped increasing, the rate of subscription to wireless broadband connections has continued to increase.
- ② In the future, it will not be surprising if every subscriber in the world has more than one connection, like some countries in Figure 1.
- ③ Because of future population increases, the actual number of subscribers to wired broadband in developing countries will increase steadily from now on.
- ④ The rate of subscription to wired broadband connections in developed countries is over 80%.

問8 次の文章はアメリカ合衆国のMIT(マサチューセッツ工科大学)の卒業式でのエライアス・ゼルーニーという医学者によるスピーチの一部である。これを読み、(1)から(6)の質問の答えとして最も適切なものをそれぞれ①～④のうちから一つ選べ。

It's really a privilege for me to be here and celebrate with you on this beautiful day.

I have to give you some advice about how to prepare for the next challenge, and I cannot be sure about what the right answer is. I can only talk to you about myself and the rules I've used in life.

First, I learned one thing, because I came from another country—actually, I came to America from Algeria when I was 24 years old. When I arrived, I had \$300 in my pocket, a new wife, no friends, no family, and basically this is where I learned that you can't make a contribution unless you're connected to others and you're able to connect to others. So I developed these rules called my 50/50 rules. You have to have a balance in

life because you never know when you're going to need to work with other people.

So what are these 50/50 rules? Well, the first rule that I'd like to share with you is this. Today you're going to receive a certificate. What you know today, I can assure you, is 50 percent wrong and 50 percent right. The challenge for you now is to find out what part is right and what part is wrong.

I think it is important to also realize that in life many of your contributions will not come from your main field. They will come from fields that you probably have no contact with, typically, and this is the other 50/50 rule that I would like to leave you with. Read 50 percent of what you read in the area that you're interested in, but make sure that 50 percent of what you read is not related to what you have to do.

I did this consistently because I had to learn a new language, I had to connect with new friends and new fields. Fifty percent of what I read was in radiology^{*1}. I loved this field because it combined mathematics and physics, which I love, and medicine, which I think gave me the human contact, and that's why I worked and made contributions in these fields. But 50 percent of the time I would read things outside of radiology.

It's really fun to think that way, but it's also more fun to understand that you are smarter when you're in the company of smarter people than you. It is amazing to see the benefits that you get from working with others. So my rule is that 50 percent of my friends have to be from fields that are not directly related to my field and, more importantly, I try to make sure that at least 50 percent of my friends are smarter than I am. Because you can be sure that at least half of your achievements in life will be stimulated by others, and you will stimulate others, as well.

Often you hear about the spark of genius that somebody had; this unique individual, and we all admire these individuals, but it's rarely true

that it happens to people who are completely isolated. Throughout scientific history, you've always had people, pioneer groups, that got together and made new discoveries. For example, Watson and Crick*². Watson was a zoologist*³ and Crick was a physicist*⁴. In coming together, they created the field of molecular*⁵ biology. Now look at laboratories around the world that have been very productive. They've been productive because they have, in fact, encouraged the gathering of people from different backgrounds, coming from different fields, with different ideas.

This process is of course social — it is not an individual process, it is a process you have to participate in. One objection that I hear a lot is, "But you can look foolish asking questions about fields you do not understand to people who do not know you." Well, that's true. That's very true. I asked a lot of stupid questions in my life, and you will, too. But the one thing I can tell you is that it's not a big mistake to ask stupid questions. What is a big mistake is to not ask the right question at the right time.

Another objection is that people will also tell you that if you talk too much about your ideas, someone will steal them from you. Well, my response to that is that if you have ideas that are so easy to steal, they must not be that good.

In fact, my experience is different. With truly original ideas, the response is that most people don't believe you. One of the few original things I did in my life was fiercely disbelieved and criticized, and was initially rejected for publication. So don't despair.

Last but not least, I would say you should have big dreams, full dreams, not half dreams. You know, it's very simple. You can't put a large box in a small box. Well, you cannot put a full life in a small dream box. What you need is to have a box, a dream box, in a life that is as full as the potential you have today.

*1 radiology : 放射線学

*2 Watson and Crick : 遺伝子の構造を初めて発見した科学者たち

*3 zoologist : 動物学者

*4 physicist : 物理学者

*5 molecular : 分子の

- (1) What is the speaker's overall message to his audience?
- ① You should have big dreams, not half dreams.
 - ② It's important to be open to different ideas and people.
 - ③ Fifty percent of what you think you know is actually wrong.
 - ④ You should have friends who are smarter than you.
- (2) Why did the speaker read so much outside the field of radiology?
- ① Because when he first went to America he did not speak English well
 - ② Because he wanted to learn more about physics and mathematics
 - ③ Because it was tiring for him to spend all his time reading about one subject
 - ④ Because he wanted to know the ideas of people working in other fields
- (3) According to the speaker, what was the reason for the success of Watson and Crick?
- ① They had developed their own original ideas before they came together.
 - ② They made molecular biology more productive in their laboratory.
 - ③ They stimulated each other by bringing together ideas from different fields.
 - ④ They were able to overcome their disagreements by working together.

- (4) What is meant by the underlined phrase "**This process**"?
- ① The cooperation of people from different fields
 - ② The development of molecular biology
 - ③ The production process at laboratories around the world
 - ④ The encouragement of people to gather together
- (5) Why does the speaker think it is safe to discuss one's ideas with others?
- ① Most ideas are not original, and it is unlikely that others will want to steal them.
 - ② Sharing your ideas with others is more important than whose ideas they are.
 - ③ If you explain your ideas to others, they may also tell you their own ideas.
 - ④ If the ideas are really original, it will be difficult for others to understand them at first
- (6) What does the speaker mean when he says, "You can't put a big box in a small box"?
- ① We will need to live a long time to realize our dreams.
 - ② We have a large potential, so our dreams should be equally large.
 - ③ If we want to have a full life, we may have to limit our dreams.
 - ④ Our potential does not always match our ability to dream.