

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)。

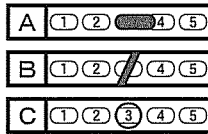
記入上の注意

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。

4. 問題冊子のページを切り離さないこと。

問1 ①～⑤は英単語における代表的な強勢型である。(1)～(10)はどの強勢型か、それぞれ①～⑤から一つずつ選べ。

- ① ● ● (強 弱) 例: sudden
 ② ● ●● (弱 強) 例: enough
 ③ ● ● ● (強 弱 弱) 例: fantasy
 ④ ● ●● (弱 強 弱) 例: amazing
 ⑤ ● ● ● (弱 弱 強) 例: understand

- (1) represent (2) interpret (3) package (4) bamboo
 (5) interfere (6) origin (7) signature (8) maintain
 (9) racket (10) successful

問2 次の(1)～(8)の空欄に入れるのに最も適切なものを、それぞれ①～④から一つずつ選べ。

(1) It may be difficult for a little child to concentrate such a long time.

- ① in ② as ③ for ④ while

(2) I will have finished reading the book .

- ① until you will come back ② until you come back
 ③ while you will come back ④ by the time you come back

(3) I advised him that he the police.

- ① should better inform ② had better inform
 ③ should better to inform ④ had better to inform

(4) The fire caused to his house.

- ① a lot of damage ② a lot of damages
 ③ many damage ④ many damages

(5) There are who are courageous enough to fight for their rights.

- ① some ones ② someones
 ③ somebodies ④ some people

(6) Be sure to write to .

- ① one and another ② each others
③ each other ④ other

(7) It is coffee with sugar in it.

- ① usually that Tom drinks ② usual to Tom to drink
③ usually for Tom to drink ④ usual for Tom to drink

(8) The president was their new plan.

- ① opposite with ② opposed with
③ opposite to ④ opposed to

問3 最も適切な英文になるように選択肢を並び替えたとき、空欄 (ア) ~ (コ) に入る語句を、選択肢①~⑤からそれぞれ一つずつ選べ。

(1) Children under six years old are not allowed to enter (ア)
 (イ) an adult.

- ① accompanied ② unless ③ are
④ they ⑤ by

(2) We are often surprised (ウ) (エ) know about our own country.

- ① to ② little ③ we
④ how ⑤ discover

(3) The committee put trash boxes all over campus, (オ) (カ)
 clean.

- ① it ② to ③ keep
④ help ⑤ hoping

(4) It took a while to (キ) (ク) the customers' needs.

- ① that ② products ③ develop
④ new ⑤ meet

(5) I cannot thank my parents (ケ) (コ) with great care.

- ① for ② up ③ enough
④ us ⑤ bringing

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

(1) Mari: How was Yuka last night?

Jean: She never turned up.

Mari: What? Was she sick or something?

Jean: I don't know. I waited over 30 minutes, but I gave up and went home.

- ① lastly
- ② at the end
- ③ at the last
- ④ in the end

(2) Kohei: How's your job?

Adam: I quit last week.

Kohei: Really? Why? Were they not paying you enough?

Adam: No, the pay. I just didn't get on well with my boss.

- ① it didn't make any difference to
- ② it had no point in
- ③ it had nothing in common with
- ④ it had nothing to do with

(3) Linda: What do you think of the new teacher?

Tom: What, Mr. Scott? He's terrible! He's so strict.

Linda: Well, yes, but he's a pretty good teacher.

- ① in contrast to
- ② in the contrary
- ③ on the other hand
- ④ moreover

(4) (James is talking to his daughter Ann.)

James: I had another job offer yesterday.

Ann: Great. What kind of job is it?

James: Working as a computer engineer in Toronto.

Ann: Toronto! Dad, I'm going to move to Canada!

- ① I can't stand it when
- ② there's nothing to it if
- ③ there's no way that
- ④ it's hard to tell whether

(5) Yuna: You look busy. Are you selling a lot of coffee?

Melissa: I'm exhausted. I haven't had a break all afternoon.

Yuna: Why don't you go and rest for half an hour? I'll
 for you.

Melissa: Wow, thanks!

- ① take over
- ② take place
- ③ take time
- ④ take up

(6) Kate: Have you ever thought of becoming an actor?

David: An actor? Why do you ask?

Kate: I think you'd be good at it.

David: You must be joking! , I'm too shy, and on top of that I don't have the looks.

- ① At first
- ② All at once
- ③ For one thing
- ④ From the bottom

問5 次の(1)~(4)はそれぞれ異なるテーマについて述べた小文であるが、つながりを良くするために取り除いたほうがよい文が一つずつ含まれている。取り除く文として最も適切なものを、それぞれ下線部①~④から一つずつ選べ。

- (1) All languages have the same purpose — to communicate thoughts — and yet they achieve this aim in many different ways. It seems there is no feature of grammar that is used in all languages. ① However, many people believe that all languages have the same ② origin. ③ The ways of expressing past/present, male/female, singular/plural, and so on can vary widely. ④ Many languages lack quite basic features of grammar or vocabulary, while others are extremely complex. Finnish has fifteen noun forms, while English has none, except for the possessive “’s.”
- (2) Estimates of the number of languages in the world usually put the number at about 2700, though no one has ever properly counted them. In many countries, perhaps most, there are at least two native languages, and in some cases there are hundreds. ① India probably leads the world, with more than 1600 languages and dialects. ② The national language of India, Hindi, is spoken by over 420 million people. ③ The number of languages naturally changes as groups die out or stop using their own languages. ④ When Columbus arrived in the New World, there were about 1000 languages there. Today, there are about 600.

- (3) There are things that even the best scientists of today can't explain. But that doesn't mean we should rely on explanations depending on ^① magic or the supernatural. ^② Imagine how people 1000 years ago ^③ would have felt if they had seen an airplane or a computer. ^④ They ^③ would probably have thought it was magic. ^④ Nowadays, very few ^④ people believe in magical explanations. But these machines are now common, and we know how they work. There is no need to explain them as magical.
- (4) Until recently, it was thought that humans had stopped evolving long ago. ^① Modern humans first evolved in Africa around 200,000 ^② years ago. ^② But now, our ability to analyze our DNA shows that we ^③ continue to change to adapt to our environment. ^③ Most of us feel ^④ breathless on high mountains because there is less oxygen there. ^④ But people in Peru have developed a gene that allows them to ^④ absorb more oxygen. Tibetans and Ethiopians have also independently adapted to high altitudes. This shows that natural selection can take different paths to reach the same result: survival.

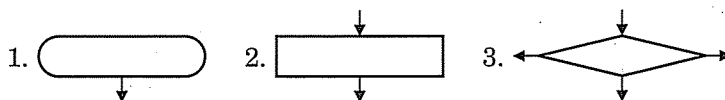
問6 次の文章は、仕事の流れの解析や管理に用いるフローチャートの説明である。これを読み、以下の(1)~(4)の設問に答えよ。

Flowcharts

【 (ア) 】

Flowcharts are easy-to-understand diagrams that show how the steps of a process fit together. They tend to consist of three main symbols, linked with arrows that show the direction of flow:

1. Elongated circles, which show the start or end of a process.
2. Rectangles, which show instructions or actions.
3. Diamonds, which highlight where you make a decision. The outgoing arrows show the possible results of the decision with simple descriptions.



【 When to Use a Flowchart 】

Organizations use flowcharts to:

- Define a process.
- Standardize a process.
- Communicate a process.
- Identify weak points in a process.
- Improve a process.
- Solve a problem.

For example, software developers can use flowcharts to work out how the parts of a process are connected. Inexperienced team members might follow a flowchart to complete activities in the right order. A manufacturing company could make sure that its processes are properly followed by applying a flowchart that includes questions and decision points.

【 (1) 】

This tool's simplicity allows you as a team leader to document a process quickly and clearly, so that others will understand and apply the process correctly and consistently. It can also help you to estimate how long the process will take altogether because you're better able to judge the time needed for each task. And it'll be easier for you to identify who you should involve and at what stage.

You can also benefit from the process of creating a flowchart itself as you build it step by step. You'll be able to focus on the detail of each individual stage, and then "zoom out" again to see the wider picture.

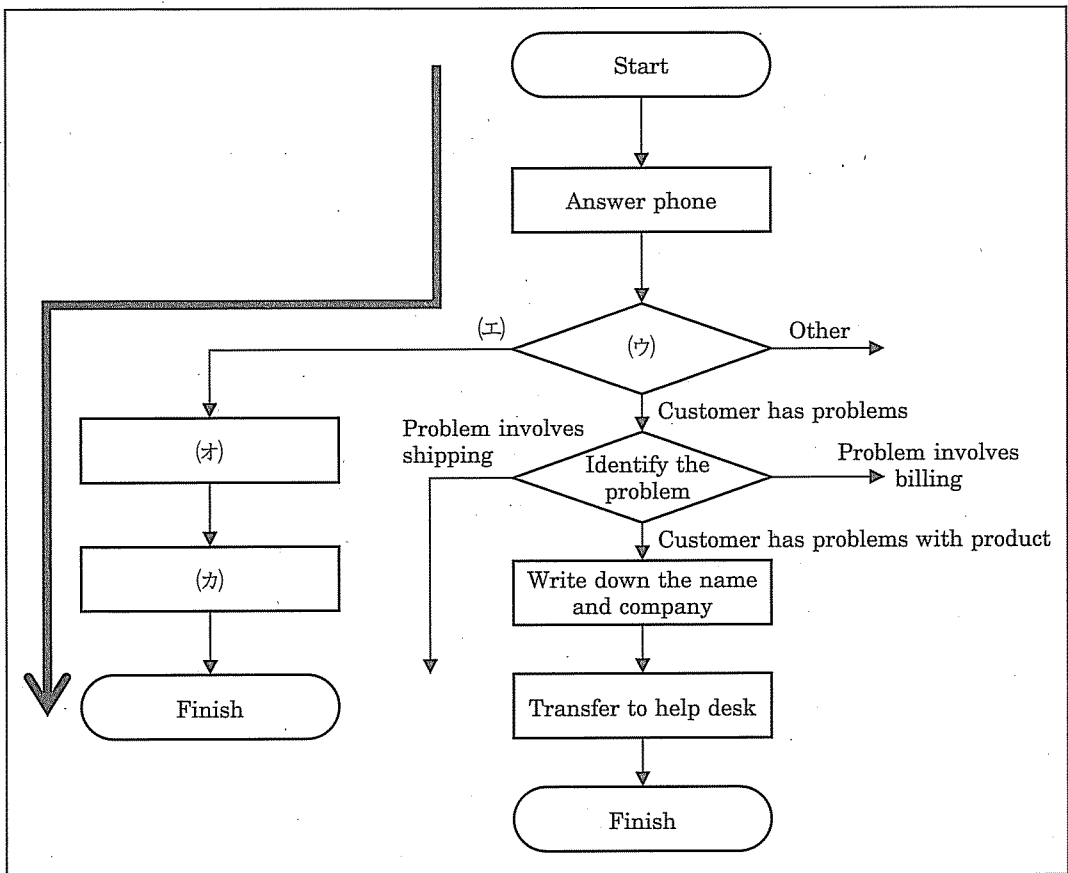


Figure 1. Example of a flowchart showing how the receptionists in a company should transfer incoming phone calls to the correct department

(1) 本文の見出し【 (ア) 】と【 (イ) 】に最も適切なものを、それぞれ以下の①～④から一つずつ選べ。

- ① How to Create a Flowchart
- ② What Is a Flowchart?
- ③ Who Should Use a Flowchart?
- ④ Why Use Flowcharts?

(2) 仕事に慣れていない人にとってフローチャートはどのように役立つか、本文の記述に最も合うものを以下の①～④から一つ選べ。

- ① To focus on the detail of each individual stage
- ② To see whether any of the steps are unnecessary or too complicated
- ③ To estimate how long the process will take altogether
- ④ To find out which step comes after which

(3) 本文中の下線部分“zoom out” again to see the wider picture の意味を最もよく説明するものを、以下の①～④から一つ選べ。

- ① look at the flowchart again in greater detail
- ② consider how the flowchart works overall
- ③ see a large version of the flowchart
- ④ apply the flowchart to other processes

- (4) 企業の受付が顧客と交わした電話による次の会話は Figure 1 の太矢印にそったものである。Figure 1 の(ウ)~(カ)に最も適切なものを、それぞれ①~④から一つずつ選べ。

Receptionist: Good afternoon, this is PrintRight. Chris Batkin speaking.

Customer: Oh, good afternoon. This is Liz Baines of Aspidora Restaurant.

Receptionist: Thank you for calling. How may we help you?

Customer: We need to have some new menus printed for the restaurant.

Receptionist: Yes, we can certainly do that. Can you tell me your name again?

Customer: Yes, it is Liz Baines. B-A-I-N-E-S.

Receptionist: Thank you. And did you say your restaurant was Aspidistra?

Customer: No, it's Aspidora. A-S-P-I-D-O-R-A. Your sales representative, Mr. Johnson, handled my order last time.

Receptionist: Thank you, Ms. Baines. I'll put you through to Mr. Johnson right now.

Customer: Thank you very much.

- (ウ) ① Estimate the importance of the customer
② Form a good relationship with the customer by introducing yourself
③ Decide whether you should report the customer's name to your manager
④ Judge what type of service the customer requires

- (エ) ① Customer knows someone in the company
- ② Customer wishes to place an order or ask for product information
- ③ Customer requires product support or repair
- ④ Customer requests a meeting to exchange information
- (オ) ① Write down the name and company of the customer
- ② Promise a date for an interview
- ③ Check the relationship between the customer and sales representative
- ④ Tell the customer the spelling of your name
- (カ) ① Show the customer the way to the sales department office
- ② Ask the customer to call the sales department
- ③ Transfer the phone call to the sales department
- ④ Ask the sales department to call the customer back

問7 ロボットの学習について書かれた次の英文を読み、(1)~(4)の答えとして本文の内容に最も近いものを、それぞれ①~④から一つずつ選べ。

Like any other form of transportation, walking down the street has its own rules of behavior. There aren't many of these, but there are some widely agreed principles about choosing a walking speed, keeping to the same side of the road as other people, avoiding running into somebody, and so on. Researchers at MIT^{*1} in the USA have been looking at the unwritten rules of walking for a new autonomous robot^{*2} with "socially aware navigation."

At MIT's Stata Center, the robot was able to avoid collisions^{*3} while keeping up with the pace of those walking back and forth. "Socially aware navigation is essential for mobile robots operating in environments that require frequent interactions with people moving on foot," says Steven Chen, who led the work on the project as a former MIT graduate student and is

the main author of the resulting study. “For instance, small robots could operate on sidewalks for package and food delivery. Similarly, we could develop devices to transport people in large, crowded spaces, such as shopping malls, airports, and hospitals.”

Walking down the street may appear easy enough, but MIT’s researchers analyzed it into four parts: positioning (understanding its precise location), perceiving (being aware of its surroundings), motion planning (determining the ideal path towards any given destination), and controlling (physically following a selected route).

The biggest difficulties came in trying to predict which way a person would go. Humans are extremely unpredictable, and they might stop or switch paths while walking for any number of reasons. “The problem in real situations is that robots might be too cautious or too aggressive*4,” says graduate student Michael Everett, a co-author of the study. “People don’t expect them to follow the socially accepted rules, like giving people enough space or driving at acceptable speeds, and as a result robots are more trouble than help.”

The solution? Machine learning. Chen, Everett and their fellow researchers provided their robot with a variety of simulations, showing it what speeds and routes were appropriate. They also used social customs, like rewarding the robot when it passed on the right and punishing it when it passed on the left.

The test at Stata Center proved that the lessons had worked. “We wanted to bring it somewhere where people were doing their everyday things — going to class, getting food — and we showed that our robot was pretty good at dealing with all that,” Everett says. “One time there was even a tour group, and it perfectly avoided the group.”

Looking into the future, the hope is that the robot will be regularly able to handle such groups of people. “Groups behave differently from

individual people, and you may have to learn something totally different if you see five people walking together,” Everett says. “There may be social rules like, ‘Don’t move through people, don’t split people up, treat them as one mass.’ That’s something we’ll be looking at in years to come.”

*1 MIT : マサチューセッツ工科大学

*2 autonomous robot : 自律ロボット

*3 collision : 衝突

*4 aggressive : 強引な

- (1) What is the most appropriate title for the text?
- ① Robots are learning how to move through a crowd
 - ② Using mobile robots for transport and delivery
 - ③ Why robots are more trouble than help
 - ④ Antisocial robots may be a problem in the future
- (2) According to the text, which of the following is a generally agreed rule?
- ① Don’t walk together in a large group.
 - ② Don’t move too close to other people.
 - ③ Pass people on the left.
 - ④ Transport people in large, crowded spaces.
- (3) Which of the following is **not** an example of socially aware navigation?
- ① moving on the same side of the path as people walking ahead
 - ② moving at a similar speed to people ahead and behind
 - ③ moving along a path that has been previously fixed
 - ④ moving in a way that avoids direct contact with people

- (4) Why is the robot currently unable to handle large crowds of people?
- ① Most people have never seen a robot walking around.
 - ② Robots tend to treat groups of people as one mass.
 - ③ It is unable to move through groups of people without collisions.
 - ④ It does not have adequate rules for navigating among large groups of people.

問8 次の文章“Are We Really Born That Way?”は、人間の性格や行動と、遺伝・育成環境について論じている。(1)~(5)の空欄に入れるのに最も適切なものを、それぞれ①~④から一つずつ選べ。

Are We Really Born That Way?

【 Nature versus Nurture 】

You got your green eyes from your mother and your big nose from your father. But where did you get your outgoing personality and talent for singing? Did you learn these from others or was it determined by your genes^{*1}? While it's clear that physical characteristics are inherited from your parents, science is not so clear about your behavior, intelligence, and personality. The old argument of nature versus nurture has never really been won. We do not yet know how much of us is determined by our DNA and how much by our life experience. (1).

Some scientists think that people behave as they do because of genetic^{*2} tendencies or even “animal instincts.” This is known as the “nature” theory of human behavior. Other scientists believe that people think and behave in certain ways because they are taught to do so. This is known as the “nurture” theory of human behavior.

Fast-growing understanding of human DNA has made it clear that both sides of the argument have some truth. Nature provides us with certain abilities and characteristics from or even before the time of our birth;

nurture takes these tendencies and shapes them as we learn and grow.

(2) ? No. The “nature versus nurture” argument still continues, as scientists fight over how much of our personality is shaped by genes and how much by the environment.

[The Nature Theory]

(3) . The nature theory goes a step further to say that more abstract characteristics such as intelligence, personality, and sexual preferences are also written in our DNA.

If genes did not affect our behavior, we would expect that a pair of twins brought up by the same family under the same conditions would have similar characteristics, while twins brought up in two separate families under separate conditions would have different characteristics. But in fact studies show that even twins brought up in separate families share many surprising similarities.

[The Nurture Theory]

Although they admit that genetic tendencies may exist, supporters of the nurture theory believe that eventually these tendencies don't matter — that our behavior is formed only by the environment in which we grow up. Studies of children have provided the most important evidence for nurture theories. If the environment did not contribute anything to a person's characteristics and behavior, then identical twins should be exactly the same in every way, even if they were brought up apart. But many studies show that in reality they are never exactly alike, even though they are very similar in most ways.

[Nature *and* Nurture]

So, was the way we behave established in us before we were born? Or (4) ? Researchers on both sides of the argument agree that the link between a gene and a behavior is not the same as cause and effect. While a gene may increase the likelihood that you'll behave in a particular way, it

does not *make* you behave in that way. (5) .

*1 gene : 遺伝子

*2 genetic : 遺伝的

- (1)
 - ① Science cannot offer us much help in answering this question
 - ② Perhaps in the long run neither one is very important
 - ③ Even so, we can expect to learn the answer very soon
 - ④ But we do know that both influence us in various ways
- (2)
 - ① Do we really need to continue this argument
 - ② So is that the end of the story
 - ③ Can our DNA tell us anything further
 - ④ But which of them is more important
- (3)
 - ① Scientists have known for years that characteristics such as eye color and hair color are determined by specific genes
 - ② Since family members often behave in similar ways, scientists have long assumed that DNA affects character
 - ③ For many years, scientists were unable to explain why children tended to inherit many of their parents' physical characteristics
 - ④ Scientists are well aware that genes affect our height and appearance, but do not believe that they also affect our personality
- (4)
 - ① does it depend on the genes we inherit from our parents
 - ② is it unrelated to the environment in which we grow up
 - ③ has it developed over time in response to our experiences
 - ④ is it something over which we have little control

- (5) ① In other words, you can still choose what kind of a person you want to be in the future
- ② This means that although you cannot change the way you behave, you can follow your instinct in choosing your career
- ③ Consequently, your likes and dislikes, along with your strengths and weaknesses, make you the person that you are
- ④ That is to say, the person you become is not influenced by the person you were born as

