

デザイン工学部A方式I日程・理工学部A方式I日程  
生命科学部A方式I日程

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。

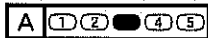
マークシート解答方法についての注意

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)。

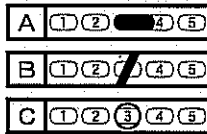
記入上の注意

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。

[I] つぎの会話の中に入る最も適切な語(句)をイ~ニの中から一つ選び、その記号を解答用紙にマークせよ。

(1) A : Mr. Weir, I was absent from this class last week as I had an interview.

B : You  have told me in advance.

イ should      □ will      ハ can      ニ had better

(2) A : How did you come here?

B : On foot, because I had my bicycle .

イ steal      □ stole      ハ stolen      ニ to steal

(3) A : How was the concert last night?

B : Great! Every time I go to a concert, I feel .

イ exciting      □ to excite      ハ excited      ニ to be excited

(4) A : I couldn't believe the news that the famous movie star died.

B :  could I.

イ Neither      □ No      ハ Not      ニ None

(5) A : School is a place  the students are supposed to study.

B : No one can disagree with that!

イ as      □ where      ハ that      ニ which

(6) A : If I  Prime Minister, I would lower taxes.

B : You should be Prime Minister then!

イ are      □ had been      ハ were      ニ am

(7) A : Was the lecture a success?

B : Yes, it  to have attracted more than one thousand people.

イ reports      □ tells      ハ is told      ニ is reported

(8) A : Mr. Green, can I ask you how my essay was?

B : I have looked it over  to find many fundamental errors.

イ sufficient      □ as      ハ only      ニ according

(9) A :  your support, this project would not have been possible.

B : It was my pleasure to help you.

イ Instead      □ Except      ハ Otherwise      ニ Without

(10) A : Do you have time to talk now?

B : I don't think that it's of any use to  the matter anymore.

イ discuss with      □ discuss for      ハ discuss      ニ discussing

(11) A : Yoko doesn't like coffee,  she?

B : No, she doesn't.

イ does      □ is      ハ doesn't      ニ isn't

(12) A : How do you like Hawaii?

B : I have  it very relaxing.

イ recognized      □ realized      ハ found      ニ known

(13) A : What  is the most important to achieve your future goal?

B : Well, never give up and carry on, I guess.

イ you think      □ do you think  
ハ thought you have      ニ thinking

〔Ⅱ〕 つぎの文章は、亮介さんが新婚旅行で行ったタヒチ(Tahiti)のことを思い出しながら書いたものです。それを読んで、後の設問に答えよ。

It was about twenty years ago, (1) my wife and I got married. Like most couples, while planning our wedding, we also planned our honeymoon. I had always hoped (2) Tahiti someday. And this was my chance to do so with my life-long partner. I had always associated the South Pacific (3) beautiful blue oceans, sunsets, and white sandy beaches. My bride was kind and tolerant (4) to agree with me.

A few days later we went to the travel agent to make reservations. My bride, (5) , seemed to have some anxiety about such a trip, but we decided to leave Japan for Tahiti around the middle of July. We were afraid that the flights (6) be packed in the peak travel season that starts from late July. After (7) all of the flight arrangements, my bride and I went to a nice restaurant for dinner. She still looked a little (8) , though. So, I asked her (9) was wrong. She finally confessed her concern. You see, it was to be her first time in an airplane. "Will we be able to sit down in the airplane?" she asked me. She seemed to (10) there would be straps on the airplane to hang onto, like on a train.

問1 空欄部(1)~(10)に入る最も適切な語(句)をそれぞれイ~ニの中から一つ選び、その記号を解答用紙にマークせよ。

- (1) イ where      □ when      ハ that      ニ as  
(2) イ to visit      □ visiting      ハ visited      ニ visit  
(3) イ as      □ with      ハ of      ニ in  
(4) イ such      □ so      ハ enough      ニ as  
(5) イ however      □ therefore  
    ハ accordingly      ニ on the other hand  
(6) イ so      □ will      ハ was      ニ would  
(7) イ make      □ made      ハ to make      ニ making  
(8) イ anxious      □ anxiety      ハ happy      ニ happiness  
(9) イ the reason      □ that      ハ what      ニ why  
(10) イ see if      □ be concerned with  
    ハ be worried about      ニ have imagined

問2 Which of the following would be the best title for this passage?

- イ Environmental Preservation in Tahiti  
ハ A Funny Experience  
□ Natural Beauty in Tahiti  
ニ Airplane Safety

〔Ⅲ〕 つぎの英文を読み、後の設問に答えよ。なお、英文中の〔1〕から〔6〕はパラグラフ番号を示す。

〔1〕 I grew up in the 1970s in the suburbs of America. I remember that my dad had these enormous medical reference books. After he left for work in his green car to drive through rush-hour traffic into Chicago, I'd spend time in his study in his brown leather armchair surrounded by walls of enormous books. I could barely lift them; they filled my whole arms as I held them.  my fingers spread wide on either side of the dark blue, brown, and black covers. By late morning, I'd be sitting on the floor, still pretending to read my dad's books.

〔2〕 In the late afternoon I'd go with my mom to shop for groceries. I was like luggage and would be placed along with her handbag on the orange plastic seat on the front of the shopping cart. The grocery store was huge and suburban. We would walk slowly down the corridors of food, cardboard boxes, and attractive packages. The store music seemed to urge us on. Then we would pack the groceries into big, stiff, brown American-style paper bags. Despite years of such shopping trips, I never learned any practical shopping skills. Today I can come back from similar, huge grocery stores with a variety of ingredients that don't become a meal.

〔3〕 I rediscovered my memories of the supermarket much later in the pop art images of American consumer life by Andy Warhol\*<sup>1</sup>. A decade later in museums in New York, I would stand beneath giant, painted cans of Campbell's soup feeling happy with the familiar image. I remembered that I never cared for the chicken variety. But the images brought back my memories of the huge suburban grocery stores, the brown paper grocery bags, the red and white soup can labels. And I began thinking that I could go  some soup.

〔4〕 In school I remember reading Carl Sagan's\*<sup>2</sup> books. I wrote an

essay on evolution which I handed in with an elaborately decorated cover in careful, childish letters and a light pencil portrait of Australopithecus\*<sup>3</sup>. I wrote several others on astronomy. My child's handwriting and careful sentences were arranged in a simple order. When I think of it, this way of writing is probably a better way to write than the way I write as a scientist with a degree from MIT\*<sup>4</sup>. These early essays became reminders of a little girl that I have trouble remembering now. I had hoped that they would answer the question of how I got here from there. They never did. I carried those reminders around with me in unopened boxes until, when packing for yet another academic move, I emptied them into a recycling bin.

[ 5 ] At night I'd stay up late. <sup>(X)</sup> Deep into the hours when it was dark and quiet, I'd lie in bed and watch C, a round white plastic object with numbers painted on the black plastic cards. When the minutes changed, a card with the next number would flip down. I watched the time change and played games with the numbers. I'd look out the window into the backyard and listen to the neighborhood. Far off, I would hear insects as well as cars and trucks moving along. All of these sounds provided a soundtrack to my late-night solitude. I'd stare at the stars in the sky <sup>(4)</sup> between the trees arching over the neighbor's carefully kept lawn. I'd wonder how far I was seeing into space.

[ 6 ] These are the kinds of things I did as a child. At the end of thousands of such days I would be conferred with degrees and jobs and titles <sup>(5)</sup> and I'd be a scientist. These are the things I remember, the things I think I know. How is it that these experiences made me a scientist and not a musician or engineer or doctor or housewife? I have no idea. When the frustrations of science wear me down, I sometimes wish that I had chosen some other career. But then I realize that I'm still that kid sitting alone in the middle of the night, thrilled just to look through the window at the stars in my piece of the universe, <sup>(6)</sup> wondering what else is out there.

語注\*

\*1 Andy Warhol: アンディー・ウォーホル, アメリカの画家, 版画家, 芸術家で, キャンベル・スープの缶やドル紙幣をモチーフにしたポップアート作品が有名

\*2 Carl Sagan: カール・セーガン, アメリカの天文学者, 作家, NASA における惑星探査の指導者

\*3 Australopithecus: アウストラロピテクスという約400万年前~約200万年前に生存していた猿人

\*4 MIT: マサチューセッツ工科大学

問1 下線部(1)~(6)の言い換えとして最も適切な語(句)をそれぞれイ~ニから一つ選び, その記号を解答用紙にマークせよ。

(1) enormous

イ dirty      □ leather      ハ huge      ニ expensive

(2) urge

イ encourage      □ delay      ハ dance      ニ swim

(3) an elaborately

イ a simply      □ a complexly

ハ a gently      ニ a completely

(4) solitude

イ amusement      □ fear      ハ anger      ニ loneliness

(5) conferred with

イ taken      □ given      ハ declined      ニ received

(6) thrilled

イ disappointed      □ afraid      ハ surprised      ニ excited



問2  A ~  C に入る最も適切な語(句)をつぎのイ~ニの中から一つ選び、その記号を解答用紙にマークせよ。

- A イ along      □ for      ハ by      ニ with  
B イ in      □ for      ハ from      ニ on  
C イ the card game      □ the TV  
    ハ the clock      ニ the picture book

問3 下線部(X)の意味として適切なものをつぎのイ~ニの中から一つ選んで、その記号を解答用紙にマークせよ。

- イ The cans of Campbell's soup were opened.  
□ The degree awarded at MIT was thrown away.  
ハ Dad's enormous books were sold.  
ニ Essays from childhood were dumped.

問4 (1)~(7)の問いの答えとして最も適切なものをイ~ニの中から一つ選び、その記号を解答用紙にマークせよ。なお、選択肢中の“*She*”は全て文中の“*T*”を指す。

(1) What does the 1<sup>st</sup> paragraph suggest?

- イ She was sick.  
□ She hated to go out.  
ハ She was interested in American literature.  
ニ She liked staying in her father's study.

(2) What does the 2<sup>nd</sup> paragraph suggest about the grocery store?

- イ It needed repairing.  
□ It was in the center of town.  
ハ It was a spacious place outside the city center.  
ニ It was open throughout the night.

(3) Why are Andy Warhol and Campbell's soup mentioned in the 3<sup>rd</sup> paragraph?

- ㄱ because they remind her of her childhood
- ㄴ because she wanted to be an artist
- ㄷ because they encouraged her to be a scientist
- ㄹ because modern art evolves from science

(4) What do we know from the 4<sup>th</sup> paragraph?

- ㄱ She believes that her writing skills have improved.
- ㄴ She wanted to be a novelist.
- ㄷ She was interested in evolution and astronomy.
- ㄹ She described her dreams in her childhood essays.

(5) What does the 5<sup>th</sup> paragraph suggest?

- ㄱ She was scared of the night.
- ㄴ She was attentive to her environment.
- ㄷ She was upset by the noise outside.
- ㄹ She was honest toward others.

(6) What does the 6<sup>th</sup> paragraph suggest?

- ㄱ Becoming a musician was an ideal choice for her.
- ㄴ Her childhood was full of sad memories.
- ㄷ She is happy with her current profession.
- ㄹ She is frustrated as a full-time astronomer.

(7) Which of the following would be the best title for the passage?

- ㄱ My Motivation to be a Scientist
- ㄴ Astronomers as Artists
- ㄷ Comfort at the Grocery Store
- ㄹ My Childhood Days

[IV] 発展途上国に住む子供たちへの食糧援助に関するつぎの英文を読んで、後の設問に答えよ。

The World Food Programme (WFP) is now approaching food assistance from a health perspective. This strategy should have been taken much earlier in the field of food aid, according to Martin Bloem of WFP. "I've worked in this field for 30 years, but it's only now that policy makers are finally recognizing that nutrition\*<sup>1</sup> is important," said Bloem, who is also a medical doctor. "Nutrition is related to so many issues — resistance to disease, fairness, school performance, future income. I believe that people have a right to nutrients\*<sup>1</sup>, beyond just the right to food."

Food aid can save lives during emergencies, but the majority of global food aid does not contain enough protein and vitamins to prevent childhood stunting\*<sup>2</sup>, a condition that causes damage to children's minds and bodies which cannot be undone. "If you are a child who is stunted\*<sup>2</sup>, you are deprived of equal opportunities for the rest of your life," said Bloem. "You <sup>(1)</sup> not only have an increased risk of getting all diseases, but you also have an increased risk of not having the job you want, of having a low IQ; in short, you don't have the same brain development or physical capacity."

Stunting can be prevented if children are properly fed from before birth to 2 years of age. With sufficient nutrients during this critical 1000-day period, children experience health and economic benefits for life. According <sup>(A)</sup> to one research institute, children who were well fed before age 2 earned significantly higher wages as adults — a 46% increase on average. Studies have even shown that children who are given the right nutrients are less <sup>(3)</sup> likely to become overweight or diabetic\*<sup>3</sup>.

According to Bloem, quite a high percentage of all stunted children are already overweight because they are not eating the right food. This trend is part of a global health crisis of nutrient-related diseases like diabetes\*<sup>3</sup>

and heart disease that are projected to become a severe problem for societies and economies. "Consider the fast-growing countries like India or Indonesia, which have levels of stunting at 40%," said Bloem. "You can imagine the health and productivity costs on society that will emerge in the next 20 years." This has enormous implications for poverty reduction.

To combat childhood stunting, WFP has a combined approach that includes improving the quality and the diversity of its food products. It provides the right mix of good food for mothers and supplements home diets with vitamin powders. However, there has been tension among development programs about providing vitamin supplements. The Food and Agriculture Organization (FAO) strongly encourages a food-based approach. While it admits that supplements are necessary for high-risk groups, the FAO stresses that supplements simply cannot provide the overall long-term benefits that the food-based approach delivers.

Bloem believes the two approaches do not necessarily conflict: "Medium- and long-term solutions which promote the right to food by focusing on agricultural diversity are essential. But with this issue, we should be pragmatic. Vitamin powders have been a cost-efficient solution in the areas where we work. Investing in proper nutrition now, which costs about \$200 per child for the first 2 years, will save lives and prevent many of the much more expensive costs later in life."

An increasing number of non-government organizations share Bloem's perspective and are campaigning to place nutrition on the global development agenda. A recent UNICEF report calls for a scaling-up of global efforts to combat childhood stunting. "These programs are working," states the report. "But we must still reach millions of mothers and their children, especially those in rural areas of developing countries."

語注\*

\*<sup>1</sup> nutrition / nutrient : 栄養を取ること / 栄養素

\*<sup>2</sup> stunting / stunted : 発育不良 / 発育不良の

\*<sup>3</sup> diabetic / diabetes : 糖尿病の / 糖尿病

問1 下線部(1)~(8)の語(句)について、意味が最も近いものをそれぞれイ~ニから一つ選び、その記号を解答用紙にマークせよ。

(1) deprived of

イ given                      □ guaranteed                      ハ denied                      ニ forgiven

(2) development

イ requirement                      □ enlargement                      ハ opportunity                      ニ growth

(3) are less likely

イ are less able                      □ are sure  
ハ are more prone                      ニ do not tend

(4) supplements

イ mixes                      □ complements  
ハ spoils                      ニ exaggerates

(5) delivers

イ delights                      □ destroys  
ハ brings about                      ニ sends

(6) a cost-efficient

イ an expensive                      □ an economical  
ハ a wasteful                      ニ an appropriate

(7) later in

イ in the rest of                      □ all over  
ハ throughout                      ニ in spite of

(8) a scaling-up of

イ demanding                      □ challenging  
ハ increasing                      ニ damaging

問2 下線部(A)と(B)の内容として最もふさわしいものをそれぞれイ～ニから一つ選び、その記号を解答用紙にマークせよ。

(A) Children experience health and economic benefits for life.

- イ Children have bad jobs and low IQ scores.
- ロ Children may become overweight and diabetic.
- ハ Children have lower risks of disease and higher incomes.
- ニ Children have rapid brain and physical development.

(B) This has enormous implications for poverty reduction.

- イ It will take the next 20 years to reduce poverty.
- ロ Poverty increases the health and productivity of societies.
- ハ Stunting has little to do with poverty reduction.
- ニ Stunting will make the reduction of poverty more difficult.

問3 下線部(C)の the two approaches がさすものをイ～ニから一つ選び、その記号を解答用紙にマークせよ。

- イ the short-term approach and the long-term approach
- ロ WFP's combined approach and FAO's food-based approach
- ハ the food-quality approach and the food-diversity approach
- ニ educational approaches and technical approaches to providing vitamin supplements

問4 下線部(D)の this issue がさす内容として最もふさわしいものをイ～ニから一つ選び、その記号を解答用紙にマークせよ。

- イ whether agricultural diversity is more important than food aid
- ロ whether we should aim at medium- or long-term solutions
- ハ whether priority should be given to children or to mothers
- ニ whether we should include nutrient supplements in food aid strategies

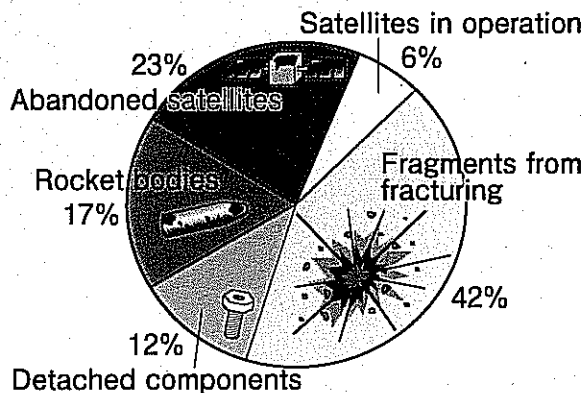
問5 つぎのイ～ニの英文の中から、本文の内容に合わない文を一つ選び、その記号を解答用紙にマークせよ。

- イ More funding for food aid is essential for agricultural diversity.
- ロ Some aid experts maintain that providing just food is insufficient.
- ハ Stunted children can be less intelligent than average.
- ニ Stunting is due to a poor diet in childhood.

[V] 宇宙ゴミに関するつぎの英文を読み、設問に答えよ。

In a recent Hollywood movie, the spacecraft of two astronauts is hit by the remains of an old satellite. While the plot is not real, the amount of actual orbital debris\*<sup>1</sup> surrounding Earth is increasing the risk of potential collisions in space. Orbital debris, or space junk\*<sup>1</sup> as it is sometimes called, is not science fiction. Someday in the future, real-life accidents could resemble the horrible destruction shown in the movie.

The possibility of real space accidents seems to be increasing. In early April 2014, the International Space Station (ISS) had to change position in order to avoid space debris from an old rocket that came within 1,000 feet of the station. It was the second time in three weeks that the ISS had to sidestep space junk. However, avoiding it is becoming more difficult; everything that is shot into low-Earth orbits (200–2000 kilometers above Earth) eventually becomes junk — even, one day, the ISS itself. It's just a matter of .



Satellites in operation, like the ISS, however, are the source of the smallest amount of total debris. The main source of space debris is fragments from fracturing. These fragments are small pieces of matter between 1 and 10 centimeters in size from previous collisions. This small



debris has the greatest potential to damage working satellites, rockets in flight, or even the ISS. It cannot be seen, but only predicted. Thus, while NASA predicts where small debris is, avoiding it is nearly impossible. The second-largest source of space junk is abandoned satellites, followed by spent rocket bodies, and then by detached components, that is, other big <sup>(3)</sup>rocket parts that come off in flight. This kind of large orbital debris with a width of more than 10 centimeters is tracked by governments so that working satellites can move to avoid running into it.

The danger of space junk has been known for many years. In 1978, a NASA scientist proposed a scenario now known as the Kessler Syndrome. According to this scenario, the density of space junk will reach a point where <sup>(4)</sup>collisions between objects generate further debris which promotes added collisions, potentially making space exploration difficult for many years to come.

The key in preventing the Kessler Syndrome is how to achieve a balance among commercial, economic, and practical interests within a framework of global regulation and governmental cooperation. Today's regulations are now more like guidelines. No one can be forced to comply. <sup>(5)</sup>Another problem is the question of who pays. In space, once a spacecraft is launched, the country that launched it carries the responsibility for it, not the private company that launched it.

One practical proposal to prevent future problems is to design modifications or additions before a space vehicle is launched. Designing <sup>(6)</sup>future craft for their eventual removal could have a large impact because the size of the space community is growing quickly, from 16 nations two decades ago to 46 now. Such design solutions depend on the type and size, as well as the orbit of the spacecraft. One proposal would use a solar sail to push space junk to low-Earth orbits. Another proposal would use a small and light ion\*<sup>2</sup> engine to move spacecraft into contact with the atmosphere.

In both proposals, the space junk eventually burns up in the atmosphere.

However in order to avoid the Kessler Syndrome, pre-launch solutions will probably have to be combined with some form of active debris removal system which clears older debris. One such system is being built by the Japan Aerospace Exploration Agency (JAXA). Researchers at JAXA are developing a cord designed to generate electricity that will slow down space-based debris. The slowed-down space junk will fall into lower and lower orbits until burning up harmlessly in Earth's atmosphere.

In the movie, the possibility of burning up upon re-entry was the fate the astronauts tried to avoid. In contrast, most of the solutions to deal with space debris in real life rely on moving it into low orbits. Once there, it will burn as it re-enters Earth's atmosphere. In short, 

B
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語注\*

\*1 orbital debris / space junk : 宇宙ゴミ

\*2 ion : イオン

問1 下線部(1)~(7)の言い換えとして最も適切な語(句)をそれぞれイ~ニの中から一つ選び、その記号を解答用紙にマークせよ。

(1) collisions

イ consequences                      □ exchanges

ハ approaches                        ニ crashes

(2) sidestep

イ decrease                            □ avoid

ハ expand                              ニ substitute

(3) spent

イ successful      □ expensive      ハ used              ニ present

(4) density

イ rate                                  □ concentration

ハ determination                    ニ process

(5) comply

イ obey                      □ concentrate      ハ cut back              ニ build up

(6) modifications

イ checks                      □ choices              ハ challenges              ニ changes

(7) harmlessly

イ safely                      □ dangerously      ハ powerfully              ニ quickly

問2 空欄 A と B に当てはまる単語(句)として最もふさわしいものをそれぞれイ~ニから一つ選び、その記号を解答用紙にマークせよ。

A    イ space                      □ weight                      ハ time                      ニ degree

B    イ destruction may be our salvation

     □ satellites can be a waste of space

     ハ regulation may be our greatest failure

     ニ fate controls our decisions

問3 下の(1)~(6)の問いの答えとして最も適切なものをそれぞれイ~ニの中から一つ選び、その記号を解答用紙にマークせよ。

(1) Why is the Hollywood movie mentioned?

- イ to describe the fate of astronauts
- ロ to show the fiction of space debris
- ハ to illustrate the real problem of space debris
- ニ to suggest possibilities for building satellites

(2) Why do working satellites have trouble avoiding small debris?

- イ because the debris cannot be seen
- ロ because the debris is from previous collisions
- ハ because statistical estimates are not accurate enough
- ニ because avoiding debris relies on NASA's predictions

(3) What might the Kessler Syndrome result in?

- イ more proposals for NASA scientists
- ロ fewer and fewer space junk collisions
- ハ greater areas covered by space junk
- ニ less space exploration in the future

(4) What is one problem with the current framework of global regulation and cooperation for space?

- イ It is unclear who will pay for eliminating space junk.
- ロ JAXA is not positive about solving the problem.
- ハ Private companies are responsible for space debris.
- ニ NASA and JAXA do not work together to solve problems.

(5) What is the aim of all technical solutions to the problem of space junk?

- イ using government agencies to remove debris
- ロ using electricity to remove space debris
- ハ destroying space debris as it falls to earth
- ニ making pre-launch designs simpler

(6) What is the main message of this passage?

- イ Time can solve the space junk problem.
- ロ Technology can solve the space junk problem.
- ハ Space junk solutions are beyond our wisdom.
- ニ Space junk requires both prevention and clean-up.



