

産業医科大学 一般  
平成24年度入学試験問題

英 語

注 意

1. 問題冊子は、指示があるまで開かないこと。
2. 問題冊子は7ページ、解答紙は2枚である。  
「始め」の合図があったら、それぞれページ数および枚数を確認すること。
3. 解答開始前に、試験監督者の指示に従って、すべての解答紙それぞれ2カ所に受験番号を記入すること。
4. 解答は、黒色鉛筆(シャープペンシルも可)を使用し、すべて所定の欄に記入すること。欄外および裏面には記入しないこと。
5. 試験終了後、監督者の指示に従って、解答紙の順番をそろえること。
6. 下書き等は、問題冊子の余白を利用すること。
7. 解答紙は持ち帰らないこと。

[ 1 ] 次の英文を読んで、文中の( ア )～( コ )に入れるのに最も適当な英語一語をそれぞれ書きなさい。

It is common to say that we “love” a book, but when we say it, we really mean all sorts of things. Sometimes we mean only that we have read a book once and enjoyed it. Sometimes we mean that a ( ア ) was important to us in our youth, though we haven’t picked it ( イ ) in years. Sometimes what we “love” is a vague impression as opposed ( ウ ) the experience of reading an actual text deeply and thoughtfully, and, all too often, ( エ ) claim to love books they haven’t read at all. Then there are the books we love so ( オ ) that we read them every year or two, and ( カ ) passages of them by heart; that cheer us ( キ ) we are sick or sad and never fail to amuse us when we take them up at random; that we recommend to all our friends and acquaintances; and to ( ク ) we return again and again with equal enthusiasm over the course of a lifetime. I think it goes without ( ケ ) that most books that engage readers on this very high level are masterpieces;\* and this is ( コ ) I believe that *True Grit* by Charles Portis is a masterpiece.

[Adapted from Afterword by Donna Tartt to *True Grit*, by Charles Portis (2010) The Overlook Press, pp. 225-226]

[注] \* masterpiece : 傑作・名作

[ 2 ] 次の英文を読んで設問に答えなさい。

There are two extreme forms of network. One is laid out in an established pattern, like the wiring diagram<sup>\*1</sup> of a computer or the structure of an army. Such networks are totally ordered, like the regularly positioned atoms in a crystal lattice<sup>\*2</sup> or the precise patterning of a spider's web.

The other extreme form of network is one in which the links are formed at random. Random networks are a mathematician's joy. One of the most famous findings in the mathematics of networks is that if you keep adding random links to a network with only a few links, there comes a point when suddenly the whole network is interconnected. For example, if you have a group of people who mostly don't know each other, it is impossible to get a rumor spreading within the group. If all those in the group know and talk to just one other person, though, a rumor can spread very quickly. This is because the point at which interconnectedness suddenly occurs is when there is an average of exactly one link per node.<sup>\*3</sup>

Random networks may be a mathematician's joy, but there are few real-world examples. One is the highway system; cities are the nodes, and highways are the links. One might also think that a random network of disease begins when someone sneezes<sup>\*4</sup> in public and passes the disease on to a group of strangers, who in turn pass it on to other strangers through their own sneezing. In practice, though, the resulting network of infection is far from random.

Most networks in real life are somewhere in between completely ordered and totally random. It was the idea of a totally random network, though, that inspired psychologist Stanley Milgram's famous small world experiments, which involved trying to send a letter to a perfect stranger. He wanted to know how many links there might be in a chain of connectedness between two random strangers.

In his best-known experiment, Milgram asked a random group of 196 people in Nebraska<sup>\*5</sup> and 100 people in Boston<sup>\*6</sup> to try to get a letter to a man in Boston by sending the letter to someone they knew by their first name and who might be closer to that man, with a request to send it on to someone that *they* knew by their first name and who might be even closer, and so on.

Sixty-four chains reached their target, with an average number of just 5.5 steps for those starting in Nebraska and 4.4 for those starting in Boston. Milgram's experiment provided the inspiration for John Guare's 1990 play *Six Degrees of Separation*, which explores the idea that we are "bound to everyone on this planet by a trail of six people". The play's title became a popular phrase, and, since then, many plays, books, films, and TV shows have been based on the same theme.

The simple statistics of a random network provide a rational reason for why short chains of connection might be the standard case. Let's suppose that each of us knows 100 people fairly well, and that each of them knows 100 people fairly well. So in just two links, any of them will be connected to every other one of them. That's 10,000 people within just two links of each other. If each of them knows 100 people, that's  $100 \times 10,000 = 1$  million people within three links of each other. Keep carrying the argument forward, and by the time you get to the sixth link that's a thousand billion people, which is considerably larger than our estimated world population of around 7 billion.

Other networks have similarly short chains, although the numbers are slightly different. The Web,<sup>\*7</sup> for example, has nineteen degrees of separation, which means that any website<sup>\*8</sup> is an average of nineteen clicks from any other. This may seem like a lot, but it's a small number compared to the over billion pages now on offer. If the links between pages were random, the figure could be accounted for by an average of just three links per website, since one billion is approximately equal to  $3^{19}$ .

The six degrees experiment and the analysis of the Web demonstrate the reality of the small world theory, although neither case is an example of a totally random network. Still, it is fascinating, both socially and mathematically, to think that we are connected to any other person in the world by only six links.

[Adapted from *The Perfect Swarm: The Science of Complexity in Everyday Life*, by Len Fisher, Paperback ed. (2011) Basic Books, New York, pp. 108-111]

- 〔注〕 \* 1 wiring diagram : 配線図  
\* 2 crystal lattice : 結晶格子 (結晶の基本構造)  
\* 3 node : 連結点  
\* 4 sneeze : くしゃみをする  
\* 5 Nebraska : ネブラスカ (米国中部の州)  
\* 6 Boston : ボストン (米国東部マサチューセッツ州の州都)  
\* 7 Web : World Wide Web の略  
\* 8 website : インターネット上のウェブサイト, ホームページ

〔設 問〕

1. 下線部(1)の実験内容と結果を、本文の内容に沿って日本語で説明しなさい。
2. 下線部(2)が指すことを、本文の内容に沿って日本語で書きなさい。
3. 下線部(3)で述べられていることを、日本語で分かりやすく説明しなさい。
4. 本文の内容に関する次の文(1)～(5)を読み、正しいものには○、間違っているものには×を、それぞれ記入しなさい。
  - (1) A rumor will not spread in a group of people unless each one speaks to at least one other.
  - (2) The spreading of a disease is a good real-world example of an extreme form of random network.
  - (3) In Milgram's experiment, all of the letters reached their target in less than 6 steps.
  - (4) Milgram's experiment was inspired by a play that was based on a popular phrase.
  - (5) According to the author, websites are an example of a completely random network.

[ 3 ] 次の英文を読んで設問に答えなさい。

Doctors save lives, but sometimes they are rude to nurses and do not listen to patients. Medical schools have traditionally done little to keep out candidates with bad characters or to train them to behave better, but that is changing.

Virginia Tech Carilion, the newest medical school in the United States, decided against relying only on grades, test scores and hour-long interviews to determine who got in. Instead, the school decided to have candidates take nine short interviews that forced them to show if they had the social skills to succeed in a health care system in which good communication has become necessary. The new process has important consequences not only for the lives of the candidates but also for the entire health care system. It is called the multiple mini interview,<sup>(1)</sup> and its use is spreading. At least eight medical schools in the United States and 13 in Canada are using it.

At Virginia Tech Carilion, 26 candidates showed up on a Saturday in March and stood with their backs to the doors of 26 small rooms. When a bell rang, the candidates turned around and read a sheet of paper taped to the door that described an ethical\*<sup>1</sup> problem. Two minutes later, the bell rang again and the candidates quickly entered the small rooms and found an interviewer waiting. The candidates had eight minutes to discuss the problem written on that room's door. Then they moved to the next room, the next surprise problem, and the next interviewer, who gave each candidate a score and sometimes wrote a brief note.

Authorities at Virginia Tech Carilion create questions that measure how well candidates can react under pressure and how willing they are to work in teams. The most important part of the interviews is often not the candidates' first responses — there are no right or wrong answers — but how well they respond when someone disagrees with them, something that happens when working in teams. Candidates who jump to false conclusions, fail to listen, or have too strong opinions do poorly because such behavior has a bad effect on teams. Those who give an appropriate response to the emotion of the interviewer or ask for more information do well in the new admission process because such tendencies are helpful not only with colleagues but also with patients. Besides typical test scores, the medical school authorities are looking for students who have good communication skills and can cooperate with others.

The system grew out of research that found that interviewers rarely change their scores<sup>(2)</sup> after the first five minutes, that using multiple interviewers removes bias,\*<sup>2</sup> and that situational questions rather than personal ones are more likely to reveal a person's true character. In fact, it has been proven that candidate scores on multiple mini interviews can

predict scores on medical licensing exams three to five years later that test doctors' decision-making, communication with patients, and cultural understanding.

A pleasant bedside manner and good listening skills have always been desirable in doctors, of course, but two trends have led medical schools to place more importance on these qualities. The first is a growing number of studies that show that many preventable deaths are caused by poor communication among doctors, patients and nurses that often results because some doctors, while having good technical skills, have poor social skills. In some hospitals, poor communication becomes so common that the wrong operations are performed.

The second related trend is that medicine is changing from individual work to group work. Individual medical practices are disappearing. In their place, large health care systems are creating teams of doctors who specialize in different fields. The strength of such teams has more to do with communication than the technical ability of any one member.

Authorities at Virginia Tech Carilion say that teamwork has become so important in medical work that the school not only chooses its students based on their willingness and ability to cooperate effectively, but also requires students to take teamwork classes. The school puts more effort into improving students' social skills than almost any other, and requires students to undertake community projects with nurses and other health professionals.

[Adapted from *New for Aspiring Doctors, the People Skills Test*, by Gardiner Harris, New York Times Online, July 10 (2011)]

[注] \* 1 ethical : 倫理的な

\* 2 bias : 偏ったものの見方

[設問]

1. 下線部(1)の試験内容を、本文の内容に沿って日本語で書きなさい。
2. 下線部(2)を日本語に訳しなさい。
3. 下線部(3)が指すことを二つ、日本語で具体的に書きなさい。

4. 本文の内容に関する次の文(1)~(5)を読み, 正しいものには○, 間違っているものには×を, それぞれ記入しなさい。

- (1) The multiple mini interview tests candidates' technical knowledge and skills in medicine.
- (2) Each candidate has to take 26 interviews, and each interview has a different topic.
- (3) Asking the interviewers questions can help raise a candidate's score.
- (4) Students who do well in multiple mini interviews are likely to do well in examinations for getting a doctor's license.
- (5) At Virginia Tech Carilion, if students did poorly on the interviews, they must take teamwork classes.

〔 4 〕 (英作文)

面接が苦手な人に対するよいアドバイスを考え, 100 語程度の英語で書きなさい。