

## 令和4年度入学試験問題

### 外国語(英語)

コミュニケーション英語Ⅰ，コミュニケーション英語Ⅱ，  
コミュニケーション英語Ⅲ，英語表現Ⅰ，英語表現Ⅱ

(4問)

令和4年2月25日

自15時20分

至17時20分

#### 答案作成上の注意

- 1 この問題冊子には、コミュニケーション英語Ⅰ，コミュニケーション英語Ⅱ，コミュニケーション英語Ⅲ，英語表現Ⅰ，英語表現Ⅱの問題があります。総ページは11ページです。
- 2 解答用紙は2枚(計3ページ)です。解答はすべてその解答用紙に読みやすい文字で記入しなさい。
- 3 受験番号は、解答用紙の所定の箇所に、必ず記入しなさい。
- 4 解答用紙の大問ごとにある「得点欄」には何も記入してはいけません。
- 5 配付した解答用紙は、持ち出してはいけません。
- 6 試験終了後、問題冊子は持ち帰ってください。
- 7 この問題冊子の裏表紙には、試験時間中に机の上に置いてよいものを記載しています。

[ I ] Read the following passage and grasp the main ideas. Then, summarize each paragraph within 100 characters (including punctuation marks) in Japanese.

Mars today is an extremely cold desert. Aside from a possible series of salty underground lakes and aquifers<sup>(注 1)</sup>, Mars appears to have only small amounts of water locked up in the polar caps<sup>(注 2)</sup> or in ice buried below the surface. However, a large number of dried-up riverbeds, deltas, lake basins, and inland seas make it clear that “the Red Planet” once had a huge amount of water on its surface. Interestingly, scientists recently have even been able to estimate how much surface water—as ice, liquid water, or water vapour—would have been present at various points throughout Mars’s history. They argue that during its earliest periods, if all that water were in liquid form, it could cover the whole planet in an ocean of around 50 to 250 meters deep! Nevertheless, there seems to be virtually no water there today. Where did all that water go?

Scientists have been trying to answer this question for decades, hoping to understand how Mars became a dry land while its neighbour, Earth, kept hold of its water and became a biological paradise. A key part of the story involves Mars’s atmosphere. Evidence shows that Mars used to have a more considerable atmosphere, and its pressure allowed the liquid water to exist on the surface. But, long ago, much of the atmosphere was stripped away by the solar wind—charged particles<sup>(注 3)</sup> streaming from the sun. The early loss of the 4.5-billion-year-old planet’s protective magnetic field probably played an important role in this. The change in the atmosphere led to the disappearance of around 90 percent of Mars’s water, leaving behind a rocky place.

At least that’s how the story goes. However, it has some problems. One is that previous models didn’t adequately take into account the surface rock’s ability to lock up water inside minerals. Over the past two decades, a lot of minerals containing water have been discovered. So now, some researchers suggest that, between 4.1 and 3.7 billion years ago, the amount of surface water decreased significantly as it was soaked up by minerals in the rocks and as it escaped into space. But how much was soaked up into the rocks? Since scientists now know the amount of hydrogen escaping into space

and the amount of deuterium<sup>(注 4)</sup> in the atmosphere, they can use this information to measure the amount of past water that ultimately escaped into space. If the natural rate of hydrogen escaping from the planet surface held steady over the past 4.5 billion years, it would be nowhere near enough to explain the disappearance of so much surface water. The conclusion is that a large amount of water disappeared into the rocks.

The idea that a significant volume of water can disappear into the rocks has implications for other rocky worlds. Water binds to Earth's minerals, too. But on our planet, plate movements recycle these minerals, constantly releasing their water through volcanic eruptions; this has probably helped keep the Earth's surface so wet. On the other hand, Mars does not have active plates, which may have led the planet to become a bitterly cold desert. In the past, the existence of a lot of water might have made Mars more habitable, more suitable for micro-level life than previously thought. Overall, the new model allows the possibility of a once-blue Mars, even for a short period of time. Moreover, it leads to an even richer understanding of how Mars and other rocky worlds evolve through the ages.

(Adapted from *National Geographic*, March 17, 2021)

(注 1) aquifers 帯水層(地下水を含む砂岩などの岩からなる層)

(注 2) polar caps 極冠(火星の両極にある白い部分)

(注 3) charged particles 荷電粒子

(注 4) deuterium 重水素

〔 Ⅱ 〕 Read the following two passages and answer the questions.

資料 1

Perhaps the first thing that springs to mind when you think of storytelling is a childhood experience of being told a story or a story that you have told a child, doing a different voice for every character. We're all familiar with traditional forms of storytelling, such as fairy tales and legends, and these oral and written stories continue to evolve as they are retold and brought to life in different forms.

However, storytelling does not just take place within a pool of lamplight in a nursery or around a campfire. Stories are part of our daily lives, in the tales we tell to our friends, the books we read, and the films we watch. Stories are also recognised as an important way of connecting with any audience, and storytelling is increasingly used in workplaces, advertising, and fundraising. In health care, too, stories are proving to be a useful tool when engaging people with quality improvement work. Sharing the story of a patient or a frontline worker with a medical team can quickly and effectively bring a situation to life and focus discussions around quality improvement and patient experience.

Statistics and data have an important place in monitoring and understanding services and helping to make improvements, but the right story can also have the power to motivate and change minds. “Storytelling approaches help us inform debate and discussion, raise awareness of the work of our financial supporters and people we work with as well as help bring key issues to life,” says Cathy Irving, Director of Communications at the Health Foundation. “They can help us appeal to hearts as well as minds.”

Stories take many forms, but they usually have some elements in common. Rather than a list of dry facts, stories have a narrative or sequence, and they introduce people or characters. We respond to stories, particularly when there is emotional detail, and remember information given in story form much more vividly. Clare Patey, Director of the Empathy Museum, says, “Stories have a transformative power to allow us to see the

world in a different way than we do if we just encounter it on our own. Stories are an entry point to understanding a different experience of the world.”

This aspect of storytelling—presenting a different perspective of the world—is important when it comes to connecting with each other. It gives us an opportunity to learn from another person’s experience, and it can shape, strengthen, or challenge our opinions and values. When a story catches our attention and engages us, we are more likely to absorb the message and meaning within it than if the same message was presented simply in facts and figures.

When someone tells us their own personal story, we get a view of the world that may be slightly or radically different from our own. When we see the world as storytellers see it, or walk in their shoes, the experience can inspire sympathy within listeners. Clare Patey says, “There’s some evidence from neuroscience<sup>(注 1)</sup>, which suggests that when I’m telling you a story and you’re listening to my story, our brain patterns begin to mirror one another.” In this sense, <sup>(4)</sup>\_\_\_\_\_.

(Adapted from *The Health Foundation*, December 12, 2016)

(注 1) neuroscience 神経科学

## 資料 2

For thousands of years, storytelling has been an important part of our humanity. Even in the current digital age, stories continue to appeal to us just as much as they did to our ancient ancestors. Stories play an active role in daily life—from the entertainment we consume, to the experiences we share with others, to what we come up with in our dreams.

For some people, crafting a story around the data may seem like an unnecessary, time-consuming effort. They may feel the insights or facts should be sufficient to stand on their own as long as they're reported in a clear manner. They may believe the revealed insights alone should influence the right decisions and drive their audience to act. Unfortunately, this point of view is based on the false assumption that business and other decisions are based solely on logic and reason.

In fact, neuroscientists have confirmed that decisions are often based on ( ① ), not ( ② ). Antonio Damasio, a professor at the University of Southern California, found that patients who had brain damage in an area that helped to process emotions (the prefrontal cortex<sup>(注 1)</sup>) struggled to make basic decisions when choosing between alternatives. Deciding on where to eat or when to schedule an appointment turned into very long decision-making processes about the advantages and disadvantages. Interestingly, these patients' decision-making skills were significantly harmed by the lack of emotional judgment. In reality, emotion plays an essential role in helping our brains to navigate the alternatives and arrive at a timely decision.

When you package up your insights as a data story, you build a bridge for your data to the influential, emotional side of the brain. When neuroscientists observed the effects that detailed information had on an audience, brain scans revealed it only activated two areas of the brain associated with language processing: Broca's area and Wernicke's area<sup>(注 2)</sup>. However, when someone is absorbed in a story, they discovered it stimulated more areas of the brain. People hear statistics, but they feel stories. This slight but important difference is shown in the following three studies.

[ A ]: Stanford professor Chip Heath gave his students some statistics on

crime patterns in the United States. Each individual, in a small group, was asked to make a one-minute presentation for or against the argument that non-violent crime is a serious problem. The students in each group then voted for the presentation which they thought was the best. Immediately afterwards, Prof. Heath showed a 10-minute video about a completely different subject. Next, he asked the students to write down everything they remembered about the presentations they had heard only 15 minutes before. The students had used 2.5 statistics on average. Only one student in ten had told a story. When the students were asked to recall the talks, 63% remembered the stories. Only 5% remembered any individual statistic.

[ B ] : In another study, researchers tested two variations of a brochure for the Save the Children charity organization. The story-based version received a donation of \$2.38 per participant, while the infographic version received \$1.14 per participant. Various statistics on the problems of African children were far less impressive than the story of Rokia, a seven-year-old from Mali.

Engagement: Researchers also discovered that, when listening to stories, people enter into a trance-like state, where they drop their intellectual guard and are less critical and questioning. Rather than focusing on the details, the audience wants to see where the story leads them. As mathematician John Allen Paulos observed, “In listening to stories we tend to suspend disbelief in order to be entertained, whereas in evaluating statistics we generally have an opposite tendency to suspend belief in order not to be fooled.”

Uncovering key insights is one skill and communicating them is another—both are equally important when getting value from the data you are now gathering. ( ③ ) represents an exciting, new field of professionalism where art and science truly come together.

(Adapted from *Forbes*, March 31, 2016)

(注 1) prefrontal cortex 前頭前野

(注 2) Broca's area and Wernicke's area ブローカ野とウェルニッケ野

問 1 資料 1 の下線部(1)について, storytelling が効果的であった実例を資料 2 より探し, その内容を 100 字以内の日本語で説明しなさい。句読点も字数に含めます。

問 2 資料 1 の下線部(2)は脳のどの部分を活性化すると資料 2 で述べられていますか。本文の中からその部分を英語で抜き出しなさい。

問 3 資料 1 の下線部(3)の具体例を資料 2 に探し, その実験結果について具体的な数字を用いて 100 字以内の日本語で説明しなさい。句読点も字数に含めます。

問 4 資料 1 の下線部(4)を補うのもっともふさわしい文を下の(1)~(4)の中から一つ選び, 番号で答えなさい。

- (1) a listener can guess what a speaker is going to say
- (2) a listener struggles to see the world as a speaker does
- (3) storytelling and listening form a two-way process
- (4) storytelling makes a speaker and a listener look alike

問 5 資料 2 の空欄( ① )と空欄( ② )を補うのもっともふさわしい英語一語を, それぞれ資料 2 から抜き出しなさい。

問 6 資料 2 の空欄[ A ][ B ]はそれぞれの研究内容をまとめた見出しです。[ A ][ B ]を補うのもっともふさわしい見出しを下の(ア)~(ウ)の中から一つ選び, それぞれ記号で答えなさい。

- (ア) Memorability
- (イ) Persuasiveness
- (ウ) Transformation



問 7 空欄( ③ )を補うのもっともふさわしい語句を下の(1)~(4)の中から一つ選び、番号で答えなさい。

- (1) Cross-cultural communication
- (2) Data storytelling
- (3) Statistical data
- (4) Story imagination

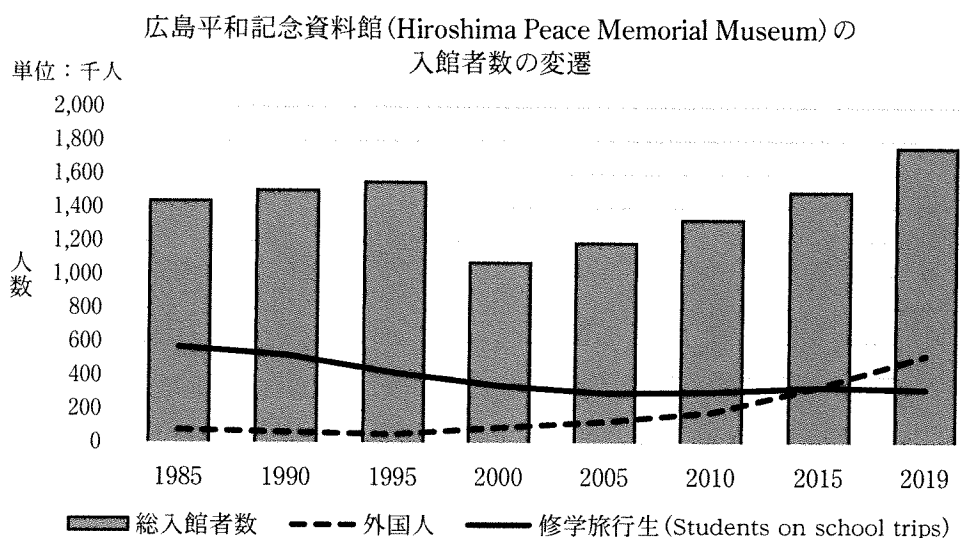
問 8 資料 1 と資料 2 の論点をもっとも簡潔に、かつ的確に表している文を下の(1)~(5)の中から一つ選び、それぞれ番号で答えなさい。

- (1) 物語を使ってデータを語ることで、人を動かす。
- (2) 子どもの頃の経験がストーリーテリングの力に関係している。
- (3) データだけでは説得力がないので、必ず物語をつけるべきだ。
- (4) 物語は聞き手の感情に働きかけ、相互理解を深める。
- (5) 聞き手は物語を理解するために、話し手に共感する必要がある。

[ III ] What is a very important skill a person should have in order to be successful in today's society? Choose one skill and give specific reasons and examples to support your choice. Write your opinion in about 100 English words, not counting punctuation marks. Put the number of words in your passage in the parentheses at the top.

〔IV〕 Analyze and describe the trends that this graph shows in a report of about 100 English words, not counting punctuation marks. Put the number of words in your passage in the parentheses at the top.

次の図は、1985年から2019年まで広島平和記念資料館を訪れた総入館者数、外国人入館者数、修学旅行生入館者数を表しています。



(「広島平和記念資料館の入館者数等の概況について」広島市ホームページに基づく)





**試験時間中に机の上に置いてよいもの**

- 本学受験票
- 大学入学共通テスト受験票
- 配付した問題冊子等
- 黒鉛筆(和歌, 格言等が印刷されているものは不可)
- 鉛筆キャップ
- シャープペンシル
- 消しゴム
- 鉛筆削り(電動式, 大型のもの, ナイフ類は不可)
- 時計(辞書, 電卓, 端末等の機能があるものや, それらの機能の有無が判別しにくいもの, 秒針音のするもの, キッチンタイマー, 大型のものは不可)
- 眼鏡
- ハンカチ
- 目薬
- ティッシュペーパー(袋又は箱から中身だけ取り出したもの)