第 1 問から第 4 問では、問題文の中の [　　] 内の数字はマークシートの問番号を示している。該当する問番号の解答記入欄に答をマークしなさい。

第 1 問　次の問 1 ～ 6 の空所 [　1　] ～ [　6　] に入れるのに最も適切なものを (1) ～ (4) から 1 つ選び、その番号をマークしなさい。

問 1.　He missed his [　1　] of opportunity to get hired by a leading company.

(1) chimney　(2) door　(3) wall　(4) window

問 2.　It [　2　] me that I had taken the wrong train and was headed in the wrong direction.

(1) dawned on　(2) reminded of　(3) struck with　(4) thought up

問 3.　Many stray cats could be observed [　3　] around in this area, hoping to spot some mice.

(1) be hung　(2) hang　(3) hanging　(4) to be hanged

問 4.　The plan still has [　4　] of room for improvement.

(1) a good many　(2) a large number
(3) only a few　(4) quite a bit

問 5.　[　5　] the sun were to rise in the west and set in the east, what would happen to us?

(1) Consider　(2) Estimate　(3) Suppose　(4) Understand

問 6.　The tail of this dog is about [　6　] that of my dog.

(1) a twice length of　(2) the twice length of
(3) twice a length of　(4) twice the length of

第 2 問　次の問 1 ～ 4 においては、それぞれ日本語の意味に合うように下の (1) ～ (7) の語句を並べかえて空所を補い、適切な文を完成させなさい。解答は [　7　] ～ [　14　] に入れるものの番号のみをマークしなさい。ただし文頭にくる文字も小文字にしてある。

問 1.　あなたは、彼が誰をその仕事に適任だと信じていたと思うのですか。

Who do you _____ [　7　] _____ _____ [　8　] _____ _____ person for that job?

(1) believed　(2) he　(3) right　(4) that
(5) the　(6) think　(7) was

問 2.　驚いたことに、最も高い値がついていたのは無名の画家の作品だった。

Surprisingly, the _____ [　9　] _____ _____ [　10　] _____ _____.

(1) a work　(2) an unknown　(3) by　(4) highest
(5) painter　(6) priced　(7) was

問 3.　懸念した通り、雨が降りそうだ。

_____ _____ [　11　] _____ _____ [　12　] _____ it would.

(1) as　(2) feared　(3) I　(4) it
(5) rain　(6) threatens　(7) to

問 4.　この計画には、解決しなければならない大きな問題が 3 つ残っている。

_____ [　13　] _____ major _____ [　14　] _____ _____ in this plan.

(1) flaws　(2) need　(3) remain　(4) resolving
(5) that　(6) there　(7) three

第 3 問　Read the text and answer the questions that follow.

The following text is an edited excerpt from a TED Talk delivered by Dr. Robert Waldinger, Director of the Harvard Study of Adult Development.

What if we could study people from the time that they were teenagers all the way into old age to see what (　あ　)?

We did that. The Harvard Study of Adult Development may be the longest study of adult life that's ever been done. For 75 years, we've tracked the lives of 724 men, year after year, asking about their work, their home lives, their health, and of course asking all along the way without knowing how their life stories were going to turn out.

Almost all projects of this kind fall apart within a decade because too many people drop out of the study, or funding for the research dries up, or the researchers get distracted, or they die, and nobody moves the ball further down the field. But through a combination of luck and the persistence of several generations of researchers, this study has survived. About 60 of our original 724 men are still alive, still participating in the study, most of them in their 90s.

Since 1938, we've tracked the lives of two groups of men. The first group started in the study when they were sophomores at Harvard College. And the second group that we've followed was a group of boys from Boston's poorest neighborhoods, boys who were chosen for the study specifically because they were from some of the most troubled and disadvantaged families in the Boston of the 1930s.

The teenagers in this study grew up into adults. Some climbed the social ladder from the bottom all the way to the very top, and some made that journey in the opposite direction.

Every two years, our research staff calls up our men and asks them if we can send them yet one more set of questions about their lives. To get the clearest picture of these lives, we don't just send them questionnaires. We interview them in their living rooms. We get their medical records from their doctors. We draw their blood, we scan their brains, we talk to their children. We videotape them talking with their wives about their deepest concerns.

So what are the lessons that come from the tens of thousands of pages of information that we've generated on these lives?

Starting out as young adults, many of our men really believed that fame and wealth and high achievement were what they needed to go after to have a good life. But our study has shown that people who are more socially connected to family, to friends, to community, are happier, they're physically healthier, and they live longer than people who are less well connected. Those who are more (　い　) than they want to be find that they are less happy, their health declines earlier in midlife, their brain functioning declines sooner and they live shorter lives than people who are not lonely. People who are in relationships where they really feel they can count on the other person in times of need, those people's memories stay sharper longer. The people in the study who were the most satisfied in their relationships at age 50 were the healthiest at age 80.

https://www.ted.com/talks/robert_waldinger_what_makes_a_good_life_lessons_from_the_longest_study_on_happiness/transcript (改変あり)

問 1. Based on the context of the TED Talk, which phrase best fits (　あ　)? Write the number of your answer in [　15　].

(1) determines how initial wealth gaps affect people's salaries
(2) impacts how satisfied people are with their careers
(3) medical testing best assesses people's health
(4) really keeps people content and mentally and physically fit

問 2. Based on the context of the TED Talk, which word best fits (　い　)? Write the number of your answer in [　16　].

(1) isolated　(2) obsessed　(3) preoccupied　(4) unconcerned

問 3. Which statement is the closest to what the speaker mentions about the study? Write the number of your answer in [　17　].

(1) Following the death of the latest generation of researchers, the study has finally concluded.
(2) The participants in the study were Harvard College students who came from poor families.
(3) The study relies solely on assessing extensive numerical data collected from participants.
(4) The study uses a comprehensive approach to examine various aspects of the participants' lives.

問 4. Which statement is the closest to what the speaker mentions about the study's findings? Write the number of your answer in [　18　].

(1) Access to regular medical testing has enabled participants to avoid significant cognitive decline.
(2) Participants from both groups in the study have achieved success regardless of their background.
(3) Social connections were identified as a factor in determining how long the participants live.
(4) The participants who feel happiest with their lives are those who became rich and famous.

第 4 問　Read the article and answer the questions that follow.

On some butterfly wings, “tails” may be more than just elegant adornments. They’re survival tools too, a study suggests.

The tails seem to attract the attention of attacking birds, keeping them away from a butterfly’s more vital body parts, researchers report May 25 in the *Proceedings of the Royal Society B*. The finding could help explain why wing tails have independently evolved multiple times across different moth and butterfly groups.

Evolutionary biologist Ariane Chotard of the National Museum of Natural History in Paris studies the wings of swallowtail butterflies, which make up the hundreds of species in the family *Papilionidae*. “A lot of these butterflies display tails,” Chotard says. “And we don’t really know why.”

Some butterfly species with false head or eyespot patterns on their wings are known to receive more attacks from predators in those regions. And Chotard and her colleagues wondered if tails were also a target.

So in the summer of 2020, the researchers collected 138 sail swallowtail butterflies from the wild in Ariege, France. Sail swallowtails — found throughout Eurasia — sport two, conspicuous black tails on hind wings with some blue and orange spotting, (　あ　) the rest of the insects’ yellow, striped coloration.

Among the collected swallowtails, 65, or 47 percent, had damaged wings, all of which had at least one hind wing tail damaged. When all 130 hind wings in this group of damaged butterflies were counted, 80 percent of the wings had damaged tails, suggesting that predators may be targeting the spindly parts.

To test that idea, the team kept wild-caught songbirds called great tits in cages. The researchers then showed the birds dummy butterflies made from gluing real swallowtail wings to a fake body made of small pieces of black cardboard, and filmed the birds’ attacks on the faux insects.

Forty-three out of 59 beak strikes, or nearly 73 percent, were on the hind wings. Twenty-three, or 39 percent, of the strikes touched both a tail and colored areas on the upper part of a hind wing simultaneously, more than any other body area on the dummies.

Chotard and her colleagues also measured how much force was needed to tear various sections of the swallowtail wing. They found that the vein of the hind wing tail was the most fragile part of the wing and is probably the location most apt to break off in a hungry bird’s beak.

Taken together, the findings suggest that swallowtail tails deflect attacks away from the butterfly’s vulnerable body to brittle extensions that easily tear off, allowing the insect to escape, the researchers say. This may be similar to the strategy some lizards use when sacrificing their detachable tails to hungry predators.

It’s unclear if there are any costs to losing one or two tails, Chotard says. “You survived, you escaped from a predator, but maybe there’s a trade-off and maybe your flight will be slower.”

Some moth tails can deflect the attacks of echolocating bats. “Now we have evidence that butterfly tails provide a similar benefit against visual predators,” says evolutionary biologist Juliette Rubin of the University of Florida in Gainesville who was not involved with the study.

Future work determining the survival benefits of the tails could be one next step, Rubin says. “It would be informative to see how live swallowtail butterflies — both with and without tails — fare against bird predators.”

https://www.sciencenews.org/article/butterfly-wing-tail-loss-break-birds-escape (改変あり)

Jake Buehler, Science News, June 15, 2022. Used with permission

注 adornment: 装飾 swallowtail: アゲハチョウ *Papilionidae:* アゲハチョウ科
sail swallowtail: ヨーロッパタイマイ sport: ～を身に着ける
hind wing: 後翅、うしろばね spindly: ひょろ長い great tit: シジュウカラ
vein: 翅脈 deflect: ～を逸らす brittle: 脆い
trade-off: 代償 fare: うまくやっていく

問 1. Fill in the blank for (あ) with the phrase that best fits the context within the article. Write the number of your answer in [19].

(1) coming close to (2) connecting directly to
(3) contrasting greatly with (4) suggesting instead

問 2. Choose the meaning of the underlined word “faux” that best fits the context within the article. Write the number of your answer in [20].

(1) artificial (2) genuine (3) juvenile (4) predatory

問 3. How many of the swallowtails collected during the survey had no hind wing tail damage? Write the number of your answer in [21].

(1) 59 (2) 65 (3) 73 (4) 104

問 4. Which of the following is mentioned about swallowtail tails in the article? Write the number of your answer in [22].

(1) The tail distracts the predator’s eyes from the vital areas, thus enabling the swallowtail to survive.
(2) The tail has a pattern that could be mistaken for the head of a swallowtail.
(3) The tail is long and easily damaged as it hits various obstacles during flight.
(4) The tail regenerates like a lizard’s tail if it is lost or damaged.

この後の第 5 問と第 6 問は記述用解答用紙に解答しなさい。

第 5 問　次の英文を読み、後の問いに答えなさい。

Picture some Viking warriors. What are they wearing on their heads? Probably a helmet, right? Does it look like the one below?

Museum of Cultural History, UiO / Ove Holst

【　あ　】

The idea that Viking helmets ever even had horns is surprisingly recent, despite the fact that the culture is well-documented in written history. According to historian Roberta Frank's summary of the horned-helmet myth, Vikings were first given their horns in an 1876 German production of a Wagner opera. Within 25 years of the show, horned helmets were synonymous with the Scandinavian raiders that colonized the British Isles and sailed to North America around 1000 CE.

The thing is, horned helmets did exist in northern Europe — but 《A》they predated the Vikings by about 2,000 years. They're products of a Bronze Age culture that predates written records in the region.

【　い　】

The Viksø helmets, discovered near Copenhagen in the 1940s

Roberto Fortuna and Kira Ursem, Courtesy National Museum, Denmark

The Viksø helmets, as the pair is called, were discovered in 1942, buried in a peat bog near Copenhagen. They're made entirely of bronze, including the twisted, bull-like horns. They're probably not objects meant to be worn into battle, but are closer to religious gear, intricately decorated with a curling beak and two bulging eyes around the forehead. Recesses in the crown of the helmets likely held a horsehair crest, and a pair of long feathers.

These ornate helmets actually represent something more mysterious than Viking intimidation: the emergence of a new mythology, and possibly politics, in the time before written history.

【　う　】

In a new study, a team of Danish archaeologists scraped off a fingernail's width of the organic glue used to hold the horns in place. Radiocarbon dating of that substance showed that the glue was last applied — and therefore the helmets were likely last used — somewhere around 950 BCE.

That was a period of tremendous turnover in western and northern Europe. Scandinavians began trading with Phoenecians, a seafaring empire in the Mediterranean. "When these changes happened in the trading networks, there were other changes connected," says Heidi Nørgaard, the senior author on the new research and an archaeologist at Denmark's Moesgaard Museum. "Building structures were changing. The cosmology was changing. 《B》Burial rites were changing."

【　え　】

The Viksø helmets hint at how the people living through those fluxes might have understood the world. The horns match imagery found in rock art in southern Spain and the nearby island of Sardinia from around the same time, as well as bronze figurines in Scandinavia.

All of the horned figures are drawn alongside swords and axes, and often ships and chariots, which another author on the new research has argued are religious symbols linked to the movement of the sun. In Spain, there's an extra emphasis on the beauty of the horned figures, represented with combs and other cosmetic tools. And all of the artifacts appear within 200 to 300 years of one another, says Nørgaard. Over that time, the horned figures grow, and become the centerpieces of rock art.

【　お　】

Together, the images suggest a culture that was beginning to define itself around warlike, potentially divine individuals — what Nørgaard and her co-authors describe as "a new social regime backed by a mixture of political and religious power." Graves from the time, excavated in Denmark and Germany, seem to hold some of those powerful individuals, sometimes described as Bronze Age royalty. "They erected huge burial mounds," Nørgaard explains. "They built a wooden chamber in the mound. They added gold artifacts, and they added huge drinking vessels. These are two examples from the northern

fringe, but this kind of burial was all over Italy." That's in sharp contrast to earlier, more egalitarian-seeming funeral practices — suggesting that this symbolism may have accompanied a new kind of hierarchy.

【 か 】

In the German site, the dead were buried with an array of metalworking tools, but not a complete set that a craftsman would need to do their job, Nørgaard says. In other words, they may have been symbols of power, rather than the dead person's trade. Scandinavia doesn't actually have sources of bronze, and so all of the raw material needed to be brought in via trade. "In these huge rich burials," she says, "You have signs of this control over craft and resources."

As it happens, the logic of putting Vikings in horned helmets might not have been so different from the actual Bronze Age societies that crafted the headgear. Frank writes that the motif of horned Viking helmets came out of "an expansionist, empire-building era" fascinated with violence, nationalism, and individualism (trends that would lead to the First World War within decades). It's possible that the Viksø helmets were meant to embody similar values. "I find it fascinating that we still today are connecting horns and warriors," says Nørgaard. "It supports this assumption of strength."

https://www.popsci.com/science/viking-horns-truth/ (改変あり)

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注 production: 上演
CE: 紀元後、AD
recess: へこんだ部分
intimidation: 威嚇
turnover: 変革
(the) Mediterranean: 地中海
Sardinia: サルディーニャ(地中海、イタリア近海の島)
artifact: 遺物
egalitarian: 平等主義の
synonymous with: ～と同義の
peat bog: 泥炭沼地
crown: 頂部
scrape off: ～を擦り落とす
Phoenecian: フェニキア人
flux: 流れ
warlike: 好戦的な
raider: 襲撃者
bulge: 突き出る
crest: 兜の飾り
BCE: 紀元前、BC
seafaring empire: 海洋帝国
chariot: (馬引きの)戦車
excavate: ～を発掘する

問 1．ヴァイキングが角の生えた兜をかぶっているというイメージが定着した経緯を、本文の内容に即して日本語で説明しなさい。

問 2. 下線部《A》に述べるヴァイキングの時代の 2000 年前という年代はどのような方法で推定されたのか、本文の内容に即して日本語で説明しなさい。

問 3. 下線部《B》が指すのはどのような様式からどのような様式への変化か、本文の内容に即して 40 字から 50 字の日本語で述べなさい。ただし、句読点も字数に含めることとする。

問 4. 問 1 の兜と Viksø 兜に角がつけられたのは、どのような考え方に基づくものか、本文の内容に即して日本語で述べなさい。

問 5. 次の段落は本文のどの位置に置くのが最も適切か、【あ】～【か】の記号で答えなさい。

The first thing that probably jumps out at you here is that there are no horns. The helmet, discovered at a Norwegian farm in the 1940s, is one of the few complete Viking helmets ever discovered. Crucially, none of them have horns.

注　jump out at: ～の目を引く

第 6 問　次の英文を読み、下線部 (1) ～ (3) の日本語の内容を英語にしなさい。

For many people, breakfast — often called the most important meal of the day — is also the day's least-exciting meal. Breakfast choices frequently reflect utilitarian needs; foods at breakfast are typically simple, quick and easy to prepare and eat, and valued for the calorie boost that revives the body and brain after a night's rest. And when people find a breakfast option they like, they generally stick with it, day after day, scientists have found.

When researchers recently evaluated the daily eating habits in thousands of U.S. and French study subjects, they saw that people repeatedly ate the same thing for breakfast — and were happy to do so. (1)それに対して、その人々が昼食あるいは夕食の席につく場合は、より多様な献立を期待し、食事を通してより楽しい経験をしたいと思っていた。

Why were so many of those people satisfied with eating the same breakfast every morning? The scientists suggested that psychological, biological and cultural drivers shape our expectations for meals, and those factors — and our enthusiasm for eating — differ depending on the time of day.

Throughout the day and into the night, our bodies follow circadian rhythms. (2)ほとんど全ての生物は、身体・精神・行動の変化を統制するこれらの 24 時間周期に忠実に従っている。 For example, a typical sleep schedule in humans follows light-related circadian rhythms. Tens of thousands of neurons in the brain regulate this so-called biological clock so that we feel sleepy at nighttime when it's dark and are more alert when the sun is up during the daytime, according to the National Institutes of General Medical Sciences.

Circadian rhythms also affect our eating schedules, and other researchers have previously investigated links between circadian rhythms and variations in the size and variety of meals that people eat throughout the day, according to a study published in the January 2022 issue of the journal *Appetite*.

For this investigation, (3)その科学者たちは、サーカディアンリズムと関連している心理的要因もまた、人々が朝食、昼食、及び夕食に食べるものに影響を及ぼしうるのかどうか疑問に思った. Those questions also interested the researchers because of their own breakfast habits, said lead study author Romain Cadario, an assistant professor in the Rotterdam School of Management at Erasmus University in the Netherlands.

"I'm a French person — I usually seek a lot of variety in the things that I eat; this is something that's valued by French gastronomic society," Cadario said. "At the same time, I ate the same breakfast every single day. So, my co-author and I started to talk about that pattern of behavior."

https://www.livescience.com/why-people-eat-same-breakfast (改変あり)

Why do you usually eat the same thing for breakfast?: Future Publishing Ltd