

2019 (平成31) 年度
一般前期入学試験
英語

注意：第1問から第3問まではマークシートに解答しなさい。
第4問と第5問は記述用解答用紙に解答しなさい。

マークシートの記入について(注意事項)

- 解答の作成には、H、F、HBの鉛筆を使用して正しくマークすること。
よい解答例 (正しくマークされている)
悪い解答例 (マークが部分的で解答とみなされない)
- 解答を修正する場合は、必ず「プラスチック製消しゴム」であとが残らないように完全に消すこと。
鉛筆の色が残っていたり、「」のような消し方などをした場合は、修正したことにならないので注意すること。
- 解答用紙は、折り曲げたりメモやチェック等で汚したりしないよう特に注意すること。
- 受験番号欄の記入方法《受験番号記入例(右図)参照》
 - 受験番号を数字で記入する
 - 受験番号の数字を正しくマークする
正しくマークされていない場合、採点できないことがあります。

— 受験番号記入例 —
受験番号1001の場合

受験番号欄			
千位	百位	十位	一位
1	0	0	1
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5

注：選択する数字は『0』から順番に並んでいます。

生白

第1問から第3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当なものを(1)～(4)から1つ選び、その番号をマークしなさい。

問 1. It was mean [1] Jim to force Sally to move to the smaller house.

(1) at (2) of (3) on (4) to

問 2. Not everyone, [2], is entirely comfortable with this new usage.

問 3. She described you as the individual [3] you were ten years ago.

問 4. The professor [4] me to approach the problem from a different perspective.

(1) encouraged (2) hoped (3) proposed (4) suggested

問 5. This passage is worthy [5].

問 6. Those rules will take me a considerable time to get [6].

(1) them (2) used (3) used to (4) used to them

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)の語を並べかえて空所を補い、適当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. 彼女はフェンス越しに 30m 先の湖を眺めていた。

She was looking at the _____ [7] _____ [8] _____.

(1) ahead	(2) fence	(3) lake	(4) meters
(5) over	(6) the	(7) thirty	

問2. その実録作品は、彼らが事件において果たした余り知られていないが重要な役割を強調している。

The documentary highlights _____ [9] _____ [10] _____ in the incident.

(1) little-known	(2) played	(3) role	(4) significant
(5) the	(6) they	(7) yet	

問3. ある意味では、それらは全て原則に矛盾する。

There _____ [11] _____ [12] _____ contradict the principles.

(1) a	(2) all	(3) in	(4) is
(5) sense	(6) they	(7) which	

問4. あなたが高く評価する画家を嫌っているのは誰だと思いますか。

Who do you _____ [13] _____ [14] _____?

(1) admire	(2) dislikes	(3) painter	(4) that
(5) the	(6) think	(7) you	

第3問 次の英文を読み、後の問い合わせに答えなさい。

Languages are dynamic. After just a few hundred years, the English of Chaucer looks bizarre to today's readers.

The factors that drive language changes are familiar. Interaction with other languages: Roman conquest spread the influence of Latin across Europe. Metaphor: The description of a circle as "round" came to refer to a "well-rounded" individual. New needs: Technological change requires the formation of words like "internet."

A new study proposes another surprising mechanism behind language change: genes. A group led by researchers at Yale University wondered whether the presence of a gene called DCDC2, which has previously been shown to influence how sounds are processed by the brain, might have played a role in linguistic change over the millennia.

"Traditionally language change is not often attributed to genetics, full stop," says Kevin Tang, a linguist who worked on the research.

The researchers aimed to do just that, by synthesizing a few working theories about the gene in question.

First, DCDC2, a gene found in nearly all vertebrates, has been connected to sound-processing in the brain. One particular variant of the gene has been associated, for example, with dyslexia (though that connection has been disputed). In one study, after scientists removed the gene in rats, they found that the timing of their neuron firings became less precise.

It turns out this kind of neural precision is also important for hearing the sounds of consonants. Vowels are drawn out, but consonants are staccato bursts of sound. (あ), exactness is key. In addition, previous studies have isolated an area of the DCDC2 gene, called READ1, that appears to affect language processing in humans.

Every time a cell in the body replicates, it copies its DNA over to the new cell. Mistakes can happen, but when they aren't detrimental to the body's functioning, they end up getting passed on from cell to cell and from parent to child. When there are variations of a given gene spread through a species, they're called "alleles." A good example is your blood type: You get one blood-type gene from each biological parent. If your blood type is AB, that means you have one allele for A and one for B; if you have two alleles for A, you are type A.

DCDC2 also comes in alleles: two that have the READ1 section of genetic code, and one that doesn't. The way that these variations of the gene are geographically distributed in humans provided the researchers with a second intriguing fact: the alleles with READ1 are less common the farther a population is from Africa.

Working from that body of research, the group set out to see if human languages exhibited any evidence of the proposed relationship of READ1 and consonant processing. They analyzed 43 distinct genetic populations — including, for example, Irish, Japanese, Yoruba, and Finns — and found that the two variants of the DCDC2 gene with READ1 were more frequent in those with more consonants in their

spoken languages. This is even true controlling for geographic distance, meaning neighboring populations with fewer consonants are less likely to have the variants. And there is no relationship between the gene and vowels, which aren't thought to be affected by READ1.

This is not to say that genes determine language, or that particular people are predisposed to learning particular languages. What the study found is the kind of subtle genetic effect that would lead to tiny, non-discriminable differences over the course of millennia. Think of it as just one more factor leading to outcomes like whether a language tends, in a very slow way, toward short, snappy sounds or relatively long ones.

Indeed, any genetic influence on a given language will be far less apparent than the cultural factors that have normally been the subject of linguistics research. The effect of Roman conquest is (い) across dozens of languages. The evolution of metaphors is easy enough to track.

But if this finding holds up, theories of linguistic evolution will have to be updated to include the original natural selector: genes.

<https://qz.com/1264305/can-genes-change-the-way-languages-evolve/> (改变あり)

注 vertebrate: 脊椎動物

dyslexia: 難読症

consonant: 子音

vowel: 母音

draw out: ～を長くする

staccato: 断続的な

replicate: 自己複製する

detrimental: 有害な

allele: 対立遺伝子

Yoruba: ヨルバ族

predisposed: 傾向がある

snappy: 素早い

問 1. 下線部の “full stop” は文中でどのような働きをしているか。最も適切なものを(1)～(4)から1つ選び、その番号を [15] にマークしなさい。

- (1) 言語変化と遺伝的特徴が全く結び付けられなかった訳ではないことを明確にしている。
- (2) 言語変化と遺伝的特徴を無関係とする考えはもはや一般的でないと断定している。
- (3) 言語変化を遺伝的特徴に結び付ける考えが大きな障害に突き当たることを示唆している。
- (4) 言語変化を遺伝的特徴に結び付ける議論が余り発展していないことを強調している。

問 2. 空所(あ)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 [16] にマークしなさい。

- (1) For example
- (2) However
- (3) Meanwhile
- (4) So

問3. DCDC2に関して、本文の記述と合致するものを(1)～(5)から2つ選び、その番号を[17]と[18]にマークしなさい(順不同)。

- (1) Based on a combination of theories about DCDC2, the new study made it possible to relate language change to the gene.
- (2) DCDC2 is contained in READ1, which is closely connected to consonant processing.
- (3) It is now clear that no variant of DCDC2 is closely related to dyslexia.
- (4) Some variant of DCDC2 plays a role in neurons firing at more precise timings than required to process vowels.
- (5) The group led by researchers at Yale University was originally organized to see how DCDC2 affects neuron firings.

問4. 空所(い)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[19]にマークしなさい。

- (1) obvious
- (2) pleasant
- (3) questionable
- (4) unacceptable

問5. 本文の内容と合致するものを(1)～(5)から2つ選び、その番号を[20]、[21]にマークしなさい(順不同)。

- (1) ある言語がいくつ子音を持っているかは、部分的にはその言語の話者の遺伝的特徴に依存している。
- (2) 遺伝子が言語に及ぼす影響は非常に小さいが、数千年という時間が経てば文化的影響に劣らず大きなものとなる。
- (3) 対立遺伝子とは、遺伝子を複製するさいに生じたミスが、有害ではないために種全体に広がったものである。
- (4) どの言語を話すかやどの言語を学びやすいかに遺伝子は決定的な影響を及ぼす。
- (5) 文化的要因が言語に及ぼした影響は、その言語を話す集団の遺伝的特徴の変化をたどることでより明確となる。

この後の第4問と第5問は記述用解答用紙に解答しなさい。

第4問 次の英文を読み、後の問いに答えなさい。

Aerosols have a strong influence on the present climate, but this influence will likely be reduced over the coming decades as air pollution measures are implemented around the world. At a global level, aerosols have helped to reduce the warming effect from greenhouse gas emissions, and necessary reductions in air pollution may thus make it harder to achieve ambitious global climate and environmental aims, such as the Paris Agreement's 2°C target. Furthermore, the local nature of air pollution means that the impacts of changes to aerosol emissions — on temperature, precipitation, extreme events, and health — are likely to differ widely from one place to another. Model and observational studies are beginning to assess these impacts, particularly the link between aerosols and precipitation, to elucidate the climate effects of cleaning up our air.

【 あ 】

Human influence on the climate is a tug-of-war, with greenhouse gas-induced warming being held partly in check by cooling from aerosol emissions. In a Faustian bargain, humans have effectively dampened global climate change through air pollution. Increased greenhouse gas concentrations from fossil fuel use are heating the planet by trapping heat radiation. At the same time, emissions of aerosols — particles that make up a substantial fraction of air pollution — have an overall cooling effect by reflecting incoming sunlight. The net effect of greenhouse gases and aerosols is the $\sim 1^{\circ}\text{C}$ of global warming observed since 1880. The individual contributions of greenhouse gases and aerosols are, however, much more uncertain. Recent climate model simulations indicate that without anthropogenic aerosols, or aerosols originating from human activity, global mean surface warming would be at least 0.5°C higher, and that in their absence there would also be a much greater precipitation change.

Many climate effects from aerosols are, however, regional rather than global. Whereas the major greenhouse gases, carbon dioxide and methane, get distributed globally, aerosols are removed from the atmosphere in a matter of days, leading to quite different patterns of impact. A reduction in aerosol emissions — as has already occurred in the United States and Europe and is assumed to continue in most climate scenarios — can be expected to have disproportionately strong impacts near emission regions, where most of the world's population lives. The effects of global warming on society are therefore different if the warming is due to loss of aerosol cooling, rather than from greenhouse gas-induced warming. Simply put, it matters not only that we limit global warming to 2°C , but also how we do it.

【 い 】

In addition to precipitation, regional cooling has likely also strongly influenced the rates of occurrence of extreme events and the hydrological cycle. Modeling cannot, however, give definitive answers regarding these effects, because the model resolution is too coarse and it remains difficult to

accurately reproduce the relevant cloud processes. It therefore remains unclear how an Asian aerosol cleanup would affect local precipitation and extreme weather events such as storms and droughts. The topic is urgent because Asian emissions levels are changing rapidly. According to one recent study, Chinese emissions of SO₂, a main precursor of cooling sulfate aerosols, have declined by 75% since 2007, whereas those from India increased by 50% over the same period.

【 う 】

Aerosols also affect region-specific climate and weather phenomena, such as the South Asian monsoon. Indian summer monsoon rainfall has steadily declined since the 1950s, and model simulations indicate that aerosol forcing is critical to explaining this trend. Aerosol-induced surface cooling is thought to lead to anomalous circulation patterns over much of the region, weakening moisture transport from the Indian Ocean and thereby reducing monsoon rainfall.

Furthermore, aerosols are mainly emitted over Northern Hemisphere land masses, resulting in a hemispheric asymmetry that may have driven a shift in the position of the Intertropical Convergence Zone over the past century. Overall, today's precipitation patterns in the Northern Hemisphere are likely markedly influenced by aerosols, both near and far from emission sources.

【 え 】

To add to the complexity, not all aerosols cool the climate. ^{『B』}Carbonaceous aerosols, by-products of incomplete combustion, absorb sunlight and can therefore heat the atmosphere. The global warming effects of black carbon, the main absorbing aerosol type, are likely to be moderate, but black carbon can have substantial regional climate impacts. Absorbing aerosols change the temperature profile of the atmosphere and therefore also alter circulation, cloud formation, and precipitation. These processes may have contributed to the observed drying trend in Southern Africa since the 1950s. Also, the deposition of dark aerosols on white snow has likely contributed to the strong Arctic warming since the 1980s.

Currently, most anthropogenic aerosol emissions are related to fossil fuel use. The massive emission reductions necessitated by the Paris Agreement will therefore also reduce aerosol-induced cooling. Health and air quality considerations provide further, strong motivations for rapid reductions in particle emissions. Legislation targeting air pollution, such as the U.S. Clean Air Act and the European Union's Ambient Air Quality Directive, has proven that such mitigation is possible. Despite limited regulation, aerosol concentrations are currently falling in parts of Asia, although the driving factors are incompletely understood. Health concerns may drive local and regional aerosol reductions faster than foreseen in the climate scenarios used, e.g., in the IPCC (Intergovernmental Panel on Climate Change) assessments. This, in turn, implies that reductions in greenhouse gas emission may need to be even more rapid than has been assumed, in order to meet the goals of the Paris Agreement. Policy measures may also target cooling sulfate aerosols and heating carbonaceous aerosols differently, making it even more challenging to predict

the outcomes of specific mitigation strategies.

【 お 】

Aerosol emissions are an important component of human influence on the climate today. 《C》Fossil fuel use reductions and air quality measures make it likely that this influence will be greatly reduced over the coming decades, with consequences for the climate that may even dominate over those from greenhouse gas in some regions.

<http://science.sciencemag.org/content/360/6385/148.full> (改変あり)

注 aerosol: エアロゾル、(大気中の)浮遊微粒子

greenhouse gas: 温室効果ガス

precipitation: 降水(量)

elucidate: ~を解明する

tug-of-war: 紗引き

Faustian bargain: ファウスト的(魂を売り渡すような)取引

methane: メタン

hydrological cycle: 水循環

coarse: 粗い

precursor: 前駆物質

sulfate: 硫酸塩

anomalous: 異常な

Intertropical Convergence Zone: 热帯収束帯(北東貿易風と南東貿易風との合流する帶状の領域)

combustion: 燃焼

mitigation: 軽減

問1. 本文の【え】の前までの内容に即して、人類が地球全体の気温にどのような影響を及ぼしているか、2つの要因に触れながら日本語で述べなさい。

問2. 今後エアロゾルの排出規制は想定より速く進む可能性があると述べられているが、その場合
下線部《A》の目標を達成するためにどのような対策が必要となると書かれているか、本文
の内容に即して日本語で述べなさい。

問3. エアロゾルの影響の例として、(i) インドではどのような変化が起こっており、また、(ii) それはなぜだと考えられるか、本文の内容に即して日本語で述べなさい。

問4. 下線部《B》のような物質は、どこでどのような気候変動の原因となったと考えられるか、本文に挙げられている具体例を2つ日本語で述べなさい。

問5. 下線部《C》を和訳しなさい。

問6. 次の段落は本文のどの位置に置くのが最も適切か、【あ】～【お】の記号で答えなさい。

Since 1990, there has been little change in the global volume of anthropogenic aerosol emissions. Regionally, however, there are large differences, with reductions in Europe and the United States balanced by increases in Africa and Asia. Recent simulations of the industrial era suggest that aerosols have prevented most surface warming from greenhouse gases in East Asia and, at the same time, changed what would have been a precipitation increase into a marked drying.

第5問 次の英文を読み、下線部(1)～(4)の日本語の内容を英語にしなさい。

Throughout the world, Japanese pottery is prized for its unassuming beauty and elegant simplicity of form and color. The standards of technical excellence and artistic achievement that have elevated Japanese pottery to such distinction have evolved over many hundreds of years. Modern Japanese potters use not only centuries-old techniques from China and Korea but have perpetuated native traditions in combination with European glazes and processes they adapted. Because of this Japan is arguably the pottery center of the world.

In no other country of the world has an esthetic appreciation of ceramics developed to as high a level as in Japan. A foreigner looking at a Bizen vase — rough, misshapen, and covered with rusty splotches — may not be impressed by it. But in Japan, ceramic ware has traditionally been judged not by its outward beauty but by its utility. (1) 茶道の創始者たちはこのような実用主義的な考え方を持っており、茶会で茶を飲むために飯碗のようなありきたりの品を選んだのだ。

(2) 陶器は茶会で重要な役割を果たすようになり、その結果陶工たちは高品質の茶碗を作ることを競い合うようになった。 They made ceramic objects for other arts as well: *kabin*, vases for floral arrangements; *koro*, hand-held censers for the incense ceremony; and *suiteki*, the small water container used in calligraphy.

Apart from its importance to the tea ceremony, pottery is so much a part of daily life in Japan that it is difficult to imagine a meal without it. (3) 食器は料理に欠かせないものなので、皿はそこに乗せる食べ物だけでなく、時間帯、部屋の雰囲気、季節と調和するように選ばれる。

The variety in tableware is extraordinary. Ceramic objects range in size from dainty *hashioki* (chopstick rests) and *sakazuki* (sake cups) to medium size plates and bowls, *tokkuri* (sake containers), *dobin* (teapots) and *yunomi* (teacups). The many sizes and shapes the dishes come in — round, oval, square, rectangular, pentagonal, leaf-shaped, fan-shaped, flower-and-vegetable-shape — lend character and variety to the table.

The way food is served on plates in Japan contrasts with the way it is served in the West and in other Asian countries. (4) 西洋の人々は、食事の際に各人が1枚の大皿と数枚の小皿を使うことになじんでいるため、日本式の食事で各自の前に置かれた小さな皿と碗の数の多さに最初は驚く。 In China food is served in large bowls or on huge platters and is eaten from small bowls. Meals in Korea are usually served in individual bowls. Flat plates are rarely used.

Sosnoski, Daniel. (2013). *Introduction to Japanese Culture.* (改変あり)

注 pottery: 陶器
glaze: 色釉
splotch: 斑点
incense: 香

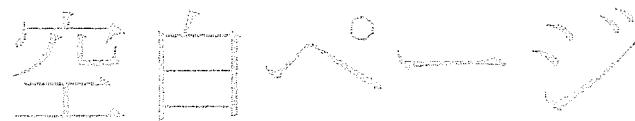
unassuming: 拙え目な
ceramic: 作陶
outward: 表面的な
calligraphy: 書道

perpetuate: ~を永続させる
misshapen: 歪んだ
censer: 香炉





龙立白



(2019 一前医英 20-21)

