

令和5年度・個別学力検査

英 語 (前)

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2. この冊子は21ページあります。
3. 試験開始後、落丁・乱丁・印刷不鮮明の箇所があれば申し出なさい。
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5. 解答はすべて解答用紙に、それぞれの問題の指示にしたがって記入しなさい。
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令和5年度個別学力検査 前期日程

医・経済・人文社会・芸術工・看護・デザイン 学部

英 語 問 題 頁

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◇M1(825-1)

問題 I 次の文章を読み、下の問いに答えなさい。なお、*のついている語句については、文末の(注)を参照しなさい。

Capsules that contain agricultural fertilizer, which were developed in Japan to save farmers time and labor, have been recognized as a cause of (A) pollution since they flow out of the field after use and eventually end up in the sea (B) river systems. ⁽¹⁾

(ア) by their adverse effects on the ecosystem*, manufacturers and industry groups are scrambling to draw up and carry out steps to combat this problem. ⁽²⁾

In January, the National Federation of Agricultural Cooperative Associations and others announced the goal of eliminating the use of fertilizers coated with plastic membranes* by 2030.

They are urging farmers to prevent the plastic capsules from flowing out, while rushing to develop (C) containers. However, they face difficult challenges in achieving practical application.

“I never thought fertilizer shells were making their way* into the ocean,” said an official from the Japan Fertilizer & Ammonia* Producers Association, an industry group (イ) mainly of fertilizer manufacturers, recalling the (D) felt when the issue came (E) light. In the early 2000s, a citizens group discovered plastic capsules while cleaning up marine litter. They were identified as having contained fertilizer.

The plastic capsules are about 3 millimeters each in diameter. The fertilizer gradually seeps* through the synthetic resin* cover. The biggest advantage of this container style is that it eliminates the need to apply fertilizer repeatedly during the summer. (ウ) in the 1970s in anticipation of the farmers aging, it is now used in about 60% of rice paddies* across Japan.

According to an estimate by one environmental group, about 157 tons of

microplastics* 5 millimeters or smaller are released into the ocean in Japan per year, with fertilizer capsules (工) for 15% of the total.

After learning of the issue of the capsules entering the ocean, manufacturers worked to make the containers thinner and reduce the amount of plastics used. They continued to urge farmers to take measures, such as placing a warning on the package of the capsules calling for the installation of nets at drainage* outlets.

But an official at the Technology and Extension Division of agriculture ministry's Crop Production Bureau said that "farmers are not sufficiently aware that plastics are used for fertilizers."

According to a survey conducted by an environmental group, the plastic shells are at most risk of flowing out of fields during work to level the soil by filling fields with water before planting rice seedlings*. Given the time of the year, "some farmers mistake them for frog eggs," an official said.

(才) the amount of marine plastics, which pose a threat to the ecosystem, has become an urgent task, with a law to promote the recycling of plastic resources enacted* in Japan last year.

There is no effective and workable* way to achieve the zero plastics target by 2030, however. Farmers who have long relied on fertilizers in plastic capsules lament that "it will be tough if they can't be used" and that "additional work will be needed."

In the first step, industry groups are trying to change the attitudes of farmers by creating a unified logo designed to attract their attention, saying that the (力) warning on the packaging has proved ineffective.

Using small drones* to scatter fertilizer without plastic capsules is an option that would lessen the workload* of farmers, but the method is not considered feasible* mainly due to its high cost. To achieve the reduction target, it is deemed necessary to put alternative shells into practical use. The industry is speeding up research and development of biodegradable* plastics, which are ultimately broken down into carbon dioxide* and water by

microorganisms*.

However, it is difficult for a capsule to easily decompose* while simultaneously allowing the fertilizer contained to seep out gradually.

At this point, successful development of a viable* alternative shell for fertilizer is not yet (F) sight. “It seems difficult to develop such a material by 2030,” one official said.

出典： *The Japan Times*, (June 6, 2022)

(注)

ecosystem：生態系

membrane：膜

make one's way：進む

ammonia：アンモニア

seep：しみ出る

synthetic resin：合成樹脂

paddy：水田

microplastic：微少なプラスチック粒子，マイクロプラスチック

drainage：排水

seedling：苗

enact：制定する

workable：実行できる

drone：無人機

workload：作業量

feasible：実行できる

biodegradable：生分解性の

carbon dioxide：二酸化炭素

microorganism：微生物

decompose：分解する

viable：実行可能な

問 1 空欄(A)～(F)に入る文脈上最も適切な単語を下記の選択肢から
選び、記号で答えなさい。

- (A) (a) air
(b) ocean
(c) soil
(d) salt
- (B) (a) on
(b) of
(c) via
(d) in
(e) to
- (C) (a) single
(b) random
(c) alternative
(d) constructive
- (D) (a) respect
(b) delight
(c) surprise
(d) comfort
- (E) (a) on
(b) of
(c) via
(d) in
(e) to
- (F) (a) on
(b) of
(c) via
(d) in
(e) to

問 2 下線部(1)~(4)と類似の意味を表す文脈上最も適切な単語を下記の選択肢から選び, 記号で答えなさい。

- (1) (a) automatically
(b) gradually
(c) occasionally
(d) finally

- (2) (a) concentrating
(b) proceeding
(c) complaining
(d) hurrying

- (3) (a) important
(b) unpleasant
(c) voluntary
(d) tender

- (4) (a) gather
(b) screw
(c) raise
(d) spread

問 3 空欄(ア)～(カ)に入る文脈上最もふさわしい単語を下記の語群から選び、適切な形に変化させて1単語で答えなさい。

(語 群) account, alarm, consist, develop, exist, reduce

問 4 下線部分(あ)を100文字以内で和訳しなさい。

問 5 下線部分(い)を100文字以内で和訳しなさい。

問題Ⅱ

次の文章を読み、下の問いに答えなさい。なお、*のついている語句については、文末の(注)を参照しなさい。

Over the next 50 years, climate change could drive more than 15,000 new cases of mammals transmitting viruses to other mammals, according to a study published in *Nature**. It's one of the first to predict how global warming will shift wildlife habitats and increase encounters between species capable of swapping* pathogens*, and to quantify* how many times viruses are expected to jump between species.

(A)

Many researchers say that the COVID-19 pandemic* probably started when a previously unknown coronavirus passed from a wild animal to a human: a process called zoonotic* transmission. A predicted rise in viruses jumping between species could trigger (あ) outbreaks, posing a serious threat to human and animal health alike, the study warns — providing all the more reason for governments and health organizations to invest in pathogen surveillance* and to improve health-care infrastructure.

The study is “a critical first step in understanding the future risk of climate and land-use change on the next pandemic”, says Kate Jones, who models interactions between ecosystems* and human health at University College London.

(B)

The research predicts that much of the new virus transmission will happen when species meet for the first time as they move to (い) locales* because of rising temperatures. And it projects that this will occur most often in species-rich ecosystems at high elevations*, particularly areas of Africa and Asia, and in areas that are densely populated* by humans, including Africa's

Sahel* region, India and Indonesia. Assuming that the planet warms by no more than 2°C above pre-industrial* temperatures this century—a future predicted by some climate analyses—the number of first-time meetings between species will double by 2070, creating virus-transmission hotspots, the study says.

“This work provides us with more incontrovertible* evidence that the coming decades will not only be (5), but (3),” says Gregory Albery, a disease ecologist* at Georgetown University in Washington DC and a co-author* of the study.

To make their predictions, Albery and his colleagues developed and tested models, and ran simulations* over a five-year period. They combined models of virus transmission and species distribution under various climate-change scenarios, focusing on mammals because of their relevance to human health.

(C)

The team built the species-distribution model to predict where mammals would move to find more liveable* habitats as the planet warms. The virus-transmission model predicts the probability of a virus jumping between species for the first time, by taking into account where species might meet as their habitats shift and how closely related they are evolutionarily* (viruses are most likely to transmit between related species).

The modelling seems “technically impeccable*”, says Ignacio Morales-Castilla, a global-change ecologist at the University of Alcalá, Spain, although he points out that forecasting exercises such as this sometimes need to include unrealistic* assumptions. But he adds that the breadth and scope of the research and its ability to identify which parts of the world might be most at risk “clearly stand out”.⁽²⁾

(D)

One assumption the researchers had to make was about how far and wide species would spread as the climate changes. But factors such as whether mammals can adapt to local conditions or physically cross barriers in landscapes are difficult to predict.

Bats are projected to be involved in viral transmission regardless of these factors, the study found. Thought to be part of the origins of COVID-19, bats are known reservoirs* of viruses and make up about 20% of mammals. The team says that—in part because bats can fly—they are less likely to experience barriers to shifting their habitats.

Although Jones applauds the study, she urges caution when discussing its implications for human health. “Predicting the risk of viral* jumps from mammals into humans is trickier, as these spillovers* take place in a complex ecological and human socio-economic* environment,” she says.

(E)

Many factors could reduce the risk to human health, including increased investment in health care or a virus being unable to infect humans for some reason, she adds.

But the researchers urge that there is no time to waste. Earth has already warmed by more than 1°C above pre-industrial temperatures, and this is driving species migration and disease swapping. “It’s happening and it’s not preventable*, even in the (お) climate-change scenarios,” Albery says.

Albery and one of his co-authors, Colin Carlson, a global-change biologist also at Georgetown University, say that even though some increase in disease transmission is inevitable, that is no excuse for inaction*. The researchers call on governments and the international community to improve the monitoring and surveillance of wild animals and zoonotic diseases, particularly in future hotspots such as southeast Asia. Improving health infrastructure is also

essential, they say.

As people begin to prepare for and adapt to global warming, most efforts focus on activities such as halting deforestation* or reinforcing sea walls. But Carlson says pandemic preparedness* and disease surveillance are climate-change adaptation, too.

出典：Nature 2022 605: 20(一部改変)

(注)

Nature：ネイチャー，イギリスの総合学術雑誌

swap：交換する

pathogen：病原体

quantify：定量する

pandemic：汎流行，パンデミック

zoonotic：動物由来感染症の

surveillance：監視

ecosystem：生態系

locale：場所

elevation：海拔

populate：居住する

Sahel：サヘル(地名)

pre-industrial：産業革命前の

incontrovertible：論争の余地のない

ecologist：生態学者

co-author：共著者

simulation：模擬実験，シミュレーション

liveable：住むことに適している

evolutionarily：進化的に

impeccable：欠点のない，申し分のない

unrealistic : 非現実的な
reservoir : 貯蔵器
viral : ウイルスの
spillover : あふれ出ること, 流出
socio-economic : 社会経済的な
preventable : 抑止できる
inaction : 無活動, 不活動
deforestation : 森林伐採
preparedness : 準備(のできていること)

問 1 空欄(あ)~(お)に入る形容詞を下記の語群から選び, 最も適切と考えられる形に変えて答えなさい。各形容詞は1回のみ使用できる。

(語群) cool, few, good, hot, light, many, poor, rich, sick

問 2 次の小見出しを挿入する場合, 最も適切と考えられる段落の間を(A)~(E)の中で1つ選びなさい。

Spillovers to humans?

問 3 下線部(1)を和訳しなさい。

問 4 下線部(2)を最も適切に説明する条件を2つ, 本文中から各10単語以内で抜き出しなさい。

問 5 下記の選択肢の中で本文の内容に最もよく一致するものを1つ選び、記号で答えなさい。

- (a) 研究者はウイルスの伝播と生物種の分布に関する既存のモデルを組み合わせ、様々な予想される気候変動のシナリオに基づいて、5年間分の気候変動についてシミュレーションを行った。
- (b) パンデミックに備えることや動物の病気を調査することは、気候変動への適応には含まれない。
- (c) 将来の予想を行うモデルを作成するためには、ときに現実からかけ離れた仮定を置く必要がある。
- (d) 今回のモデルを使って、生物が地域の環境に適応できるかと、移動の障壁となる地形を乗り越えられるかをうまく予想できた。
- (e) 気候変動を考える中での最小限にとどめれば、今回の研究で示唆されるようなウイルス伝播の増加は起こらない。

問 6 下記の選択肢の中で本文の内容に最もよく一致するものを1つ選び、記号で答えなさい。

- (a) Global warming will reduce animal diversity and increase encounters between animals of linked species.
- (b) The study suggests that in the coming half century, a large number of mammal species will change habitats.
- (c) The model study is the first to project how climate change will inhibit viral outbreaks.
- (d) High temperature areas located at high latitudes are at the highest risk of facing new infectious diseases due to climate change to come in the next 50 years.
- (e) Humans are set to make the largest contribution to virus transmission in the future.

問 7 ウイルス感染症の伝播を引き起こすうえでのコウモリの関与を、他の哺乳類との違いを明確にして100文字以内で説明しなさい。

問題Ⅲ

次の文章を読み、下の問いに答えなさい。なお、*のついている語句については、文末の(注)を参照しなさい。

第1段落

Imagine a wind farm on an otherwise untouched*, natural landscape. Then imagine two different people looking at that wind farm. Assume that they both believe the same things about wind energy as an important source of clean, renewable* energy, about the global energy-ecological* crisis we are confronted (ア), and about the role of hydrocarbon* energies in creating that crisis. One of them finds the sight of the wind farm beautiful in a very deep, heartfelt* sense, and if you ask her, she'll say that the perception is intimately connected, even shaped by, her understanding of the larger ecological context of energy. The other literally recoils* from the sight of the wind farm, as an ugly, even offensive blemish* on the wondrous, untouched naturalness of the vista*. Is one of these perceptions more objective than the other? Is one of the aesthetic judgments uttered more truthful than the other? Or is this simply a question of subjective or intersubjective* preference?

第2段落

It is curious, [more / about / you / it / the / think], that aesthetics should be a central issue in debates about wind energy. Right now, across the US, the UK and elsewhere, heated discussions are taking place at zoning hearings*, public forums and in private policy board rooms*, about the aesthetic properties of wind turbines* as features of a new landscape. The conflicting intuitions and perceptions are deep and heartfelt, even if the justifications are obscure or if attempts to explain their respective aesthetic responses sound muddled*. Some people are literally mesmerized* by wind turbines, as much by the hypnotic* motion of the blades as by the

ecologically-satisfying idea of wind turbines as sources of clean and renewable energy. Others are literally repulsed* by their industrially-constructed look, and even by their very presence as a visual intrusion on the natural amenity* of the landscape. I am interested in examining the conflict between the aesthetic intuitions motivating the debate and exploring some conceptual resources available for explaining their larger significance for our experience and understanding of human ecology*. Ultimately, I shall take sides* and argue that wind farms are beautiful in an objective, ecological sense, in the sense that an improper understanding of that eco-logicality underlies the perception of them as ugly. However, I myself empathize* with the other view and I see the disagreement as a deeply philosophical one that is much more complex than it seems.

第3段落

Consequently, I am especially interested in arguing dialectically* — treating each intuition with maximum seriousness — and using each position to clarify the other. This is a way to shed light on a larger web of philosophical issues regarding how we are to understand the relationship between aesthetics and nature, or as one could put it, the relationship between the nature of beauty and the beauty of nature. My argument will then do double duty by serving as an answer to the question about the aesthetics of wind energy, and also as a conceptual map for understanding the connection between aesthetics and nature. That we need a conceptual map at all will hopefully be shown by the difficulty of simply trying to comprehend the manifold* ways we can connect aesthetics to nature, where nature is construed ecologically, as an evolving unity within diversity of cells, organized into organisms, which inhabit niches* within ecosystems, which are arranged in bioregions*, which holistically* make up the biosphere*; and where aesthetics is understood as the study of the ways that humans experience the world through their senses,

and specifically, in ways that are beautiful or ugly or mesmerizing or revolting*. In large part, the aesthetics of wind energy is confusing because the epistemology* is confusing: when clarifying conceptually the perception of nature, you are also interested in the nature of perception, and the two themes together form a strange loop of implications. The ethics of the issue make it even more complicated.

第4段落

There are, of course, non-aesthetic reasons to like or dislike wind farms, and it is important to distinguish the aesthetic (イ) the non-aesthetic factors. One might object to a proposed wind farm for a variety of reasons that have nothing to do (ウ), or are at best indirectly related to, aesthetics. One might, for example, be worried about the ways a proposed wind farm is going to harm migrating birds or local sea life*, or about ways it might harm the regional economy by injuring neighboring farms or marinas or beaches or property values; or a tourist industry because of its disruption of the perceived natural amenity of the site. Or one might have concerns over a regulatory process involved in the planning and construction of the wind farm, which is granting private, corporate, profit-making* control over a public trust resource. There are obvious connections to aesthetics in these objections; for example, worries about how a wind farm is liable to affect tourism are connected to an anticipated loss of visual amenity. But in that case, the primary concern is economic, not aesthetic. The easiest way to single out the strictly aesthetic aspects of the wind farm question is to consider again the example from the beginning of the paper. There we imagined the difference between someone who experiences the wind farm as beautiful and a second viewer who holds the same beliefs about wind farms as the first, but who perceives the wind farm as ugly. I'll call the first person an aesthetic wind appreciator*, because she literally sees the beauty of the wind farm and the

second, a NIMBY* wind appreciator since the latter exemplifies* a widespread attitude that otherwise ecologically-minded individuals have towards proposed wind farms: great idea, but not-in-my-backyard, because it's ()!
(4)

出典：Justin Good(2006), The Aesthetics of Wind Energy, *Human Ecology Review*, vol. 13-1. (一部改変)

(注)

untouched：触れられていない

renewable：再生可能な

ecological：環境にやさしい

hydrocarbon：炭化水素

heartfelt：深い心からの

recoil：後ずさりする

blemish：欠点

vista：景観

intersubjective：ひとつの主観と別の主観の間で共通している

zoning hearing：ゾーニング協議会，ある区域に関する関係者間協議

board room：重役会議室

wind turbine：風力タービン

muddled：混乱した

mesmerize：魅惑する

hypnotic：催眠術のような

repulse：撃退する

amenity：快適さ

human ecology：人間生態学

take sides：味方する

empathize：共感する

dialectically：弁証法的に

manifold : 多様な
niche : 適切な空間
bioregion : 生態地域
holistically : 全体として考えて
biosphere : 生物圏
revolting : 不快を催させる
epistemology : 認識論
sea life : 海洋生物
profit-making : 収益を発生させる
appreciator : 鑑賞者, 真価を認める人
NIMBY : not-in-my-backyard の略
exemplify : 例示する

問 1 下線部(1)とはどのような人々なのか。風力発電施設に関する2つの意見の違いがわかるようにそれぞれの視点を、本文に基づいて、各45文字以内の日本語で説明しなさい。ただし、説明文は「風力発電所を」から始まり「視点」で終わるように書きなさい。(「風力発電所を」および「視点」は指定文字数に含まない。)

問 2 空欄(ア)~(ウ)には with か from のいずれかの語が入る。正しい組み合わせとなっているのは下記のどれか。選択肢から1つ選び記号で答えなさい。

- | | | |
|------------|--------|--------|
| (a) ア with | イ with | ウ from |
| (b) ア with | イ from | ウ with |
| (c) ア with | イ from | ウ from |
| (d) ア from | イ with | ウ with |
| (e) ア from | イ with | ウ from |
| (f) ア from | イ from | ウ with |

問 3 下線部(2)の[]内の単語を文意に合うように適切な語順に並べ替えなさい。

問 4 下線部(3)を 100 文字以内で和訳しなさい。

問 5 筆者は、自然との関係において aesthetics をどのようなものと考えているか。筆者の考えを最も的確に表す部分を第 3 段落から抜き出して 80 文字以内で和訳しなさい。〔aesthetics とは〕は指定文字数に含まない。

問 6 風力発電施設に反対する理由として、下記の(a)~(c)の内容は第 4 段落に書かれているか。第 4 段落に書かれている場合は○を、書かれていない場合は×を書きなさい。

- (a) 風力発電施設から発生する騒音について、近隣住民から苦情が寄せられる可能性があるから。
- (b) 風力発電施設の風車の羽が、渡り鳥やその地域の海洋生物を傷つけてしまう可能性があるから。
- (c) 建設と運用にコストがかかり、それらのコストの回収前に施設の耐用年数が到来してしまうことへの懸念があるから。

問 7 下記の選択肢の中で本文の内容に合うものを 3 つ選び、記号で答えなさい。

- (a) 風力タービンを新しい景色の特徴として美しいと感じるか否かについて、いろいろなところで議論されている。
- (b) 風力発電施設を美しいと感じない人々は、風力発電施設を再生可能なエネルギー源として重要であるとは考えていない。
- (c) 風力発電施設が近隣の農園、マリーナ、ビーチの資産価値を損なうことと、風力発電施設を美しいと感じることは関連性が高い。
- (d) 自然をどう感じるかについて概念的に明らかにしようとするなら、感じるとはどういうことかにも関心を持つことになる。
- (e) 風力発電施設の外観やその存在自体に嫌悪感を抱く人がいる。

問 8 下線部(4)の空欄に入る英単語として最も適切と思われるものはどれか。選択肢から1つ選び記号で答えなさい。

- (a) confusing (b) economic (c) ugly (d) important

問題IV

Read the topic carefully. Write at least two clear reasons for your opinion.
Answer in English in 120–150 words.

Doctors say stress is the most common cause of serious illness. How do you think we can reduce stress, so that we can live long, healthy lives?

