令　和　3　年　度

試　験　問　題　②

学　科　試　験

（9時 ～ 12時）

【注　意】

1. 試験開始の合図があるまで，この問題冊子の中をみてはならない．
2. 試験教科，試験科目，ページ，解答用紙および選択方法は下表のとおりである．

教　科	科　目	ページ	解答用紙数	選　択　方　法
数　学	数　学	1 ～ 10	2　枚	数学，英語は必須解答とする． 理科は左の3科目のうちから1科目を選択せよ．
英　語	英　語	11 ～ 14	3　枚	
理　科	化　学	15 ～ 26	2　枚	
	生　物	27 ～ 44	2　枚	
	物　理	45 ～ 52	1　枚	

3. 監督者の指示に従って，選択しない理科科目を含む全解答用紙(10枚)に受験番号と選択科目(理科のみ)を記入せよ．
   ①　すべての受験番号欄に受験番号を記入せよ．
   ②　理科は選択科目記入欄に選択する1科目を○印で示せ．
   上記①，②の記入がないもの，および理科2科目または理科3科目選択した場合は答案全部を無効とする．
4. 解答はすべて解答用紙の対応する場所に記入せよ．
5. 問題冊子の余白を使って，計算等を行ってもよい．
6. 試験開始後，問題冊子の印刷不鮮明，ページの落丁・乱丁および解答用紙の汚れ等に気づいた場合は，手を挙げて監督者に知らせよ．
7. 解答用紙はいずれのページも切り離してはならない．
8. 解答用紙は持ち帰ってはならない．問題冊子は持ち帰ってよい．

英　　語

Ⅰ. Write 70-100 words about how you plan to spend your free time in 2021.

This task will be graded on both content and the accuracy of the English language used. (20 点)

(問Ⅰが指示通りに解答されていない場合は，問Ⅱと問Ⅲの解答は採点されない．)

Ⅱ. 次の英文を読んで，設問に答えよ．(＊印の語には注がある．)(90 点)

Scientists often complain that people are irrational in their opposition to technologies such as nuclear power and genetically engineered (GE) crops. From a statistical perspective, these are very safe, and so (it is argued) people's fear can be explained only by emotion, based on ignorance. Electricity from nuclear power has led to far fewer direct deaths than that from coal power, yet many people are afraid of it, and hardly anyone is afraid of coal power. Similar arguments can be made about GE crops, which studies have shown are generally safe for most people to eat.

Lack of scientific knowledge may be part of the problem. Most of us are afraid of things we don't understand, and studies have shown that scientists tend to be more accepting of possibly risky technologies than ordinary people. This suggests that when people know a lot about such technologies, they usually feel good about those technologies.

But there's more to the issue. It is true that many of us fear the unknown, but it is also true that we can be careless about routine things. Part of the explanation is overconfidence: we tend not to fear the familiar, and thus familiarity can lead us to think those technologies are safe. The committee that reviewed the Deepwater Horizon blowout and oil spill* concluded that overconfidence—among executives, engineers and government officials—was a major cause of that disaster. So the fact that experts are unworried about a threat is not necessarily reassuring.

Scientists also make a mistake when they assume that public concerns are wholly or even mostly about safety. Pope Francis, for example, rejects genetic engineering of organisms in part because he views it as an inappropriate interference in God's affairs;

this is a religious position that cannot be rejected by scientific data. Some people object to GE crops such as Roundup Ready corn and soy* because they promote the increased use of pesticides*. (1)Others point to a problem with the social impacts that switching to GE organisms can have on traditional farming communities or with the political effects of leaving a large share of the food supply in the hands of a few corporations.

Geoengineering* to lessen the impacts of climate change is another example. Some concerns about geoengineering have more to do with regulation and control than with safety. Who will decide whether this is a good way to deal with climate change? (2)If we undertake the project of deciding the global temperature by controlling how much sunlight reaches the Earth's surface, who will be included in that "we", and by what process will the "right" global temperature be chosen?

Such considerations may help explain the results of a classic study of perceptions of health risks from a polluted environment. That study showed that white women, as well as non-white men and women, were much more worried about these risks than white men. Because scientists are for the most part less worried about risks than ordinary people, we might conclude that the unworried white men are right and the others are unnecessarily troubled.

Of course, the majority of scientists are white men, so it's not entirely surprising that their views match those of the demographic* group to which they belong. And there is a more important point here: risks are not equally distributed. Women and people of color are more likely to be the victims when things go wrong, so it makes sense that they tend to be more worried. Moreover, women and people of color have historically been excluded from important decision-making processes, not just in science and technology but in general. (3)あなたが方針決定過程から外されているのであれば，その過程を不公平なものとみなしたり，その結果について心配したりすることは不合理なことではない。

注

the Deepwater Horizon blowout and oil spill* 2010 年, 米国ルイジアナ州沖に設置したイギリスBP 社の石油掘削施設において, 技術的不手際からガス爆発とともに大量の原油がメキシコ湾へ流出した事故.

Roundup Ready corn and soy* 1970 年に開発された除草剤ラウンドアップに耐性をもつように遺伝子組み換えされたトウモロコシと大豆.

pesticides* 殺虫剤

geoengineering* 地球工学. ここでは, 地球温暖化対策のために成層圏に微粒子を撒いて地球へ到達する太陽光線の量を減少させる試みなどを指す.

demographic* [特定の] 人口集団の

設問

1. なぜ "lack of scientific knowledge"は問題となると考えられるのか, "scientific knowledge"がある場合と比較して, 日本語で答えよ. (10 点)
2. 下線部(1) で指摘されている二つの問題を日本語で記せ. (20 点)
3. 下線部(2) で挙げられている問題点について, 記事全体の内容を踏まえて日本語で記せ. (20 点)
4. 環境汚染被害について, 白人男性に対して, 白人女性や有色人種男性・女性の懸念の程度が異なるのはどのような理由と考えられるか, 日本語で記せ. (20 点)
5. 下線部(3) を英訳せよ. (20 点)

III. Write approximately 120 words according to the following instructions.
Argue for or against having non-scientists on decision-making committees for scientific issues.

This task will be graded on both content and the accuracy of the English language used.

(別紙解答用紙IIIの様式にしたがって解答せよ.) (40 点)