

(令 4 前)

外 国 語

英 語

(問題部分 1 ～ 12 ページ)

注意 解答はすべて答案用紙の指定のところに記入しなさい。

外国語 (英 語) 125 点

I 次の文章は環境問題について書かれたものである。この文章を読んで、問1～6に答えなさい。(配点35点)

Electric light is transforming our world. Around 80% of the global population now lives in places where night skies are polluted with artificial light. A third of humanity can no longer see the Milky Way. But light at night has deeper effects. In humans, nocturnal* light pollution has been linked⁽¹⁾ to sleep disorders, depression, obesity and even some types of cancer. Studies have shown that nocturnal animals modify their behavior even with slight changes in night-time light levels. Dung beetles* become disoriented when navigating landscapes if light pollution prevents them from seeing the stars. Light can also change how species interact with each other. Insects such as moths are more vulnerable to being eaten by bats when light reduces how effective they are at evading predators.

Relatively little is known about how marine and coastal creatures cope. Clownfish* exposed to light pollution fail to reproduce properly, as they need darkness for their eggs to hatch. Other fish stay active at night when there's too much light, emerging quicker from their hiding places during the day and increasing their exposure to predators. These effects have been observed under direct artificial light from coastal homes, promenades, boats and harbors, which might suggest the effects of light pollution on nocturnal ocean life are quite limited.

Except, when light from street lamps is emitted upwards, it's scattered in the atmosphere and reflected back to the ground. Anyone out in the countryside at night will notice this effect as a glow in the sky above a distant city or town. This form of light pollution is known as artificial skyglow, and it's about 100 times dimmer than that from direct light, but it is much more widespread.⁽²⁾ It's currently detectable above a quarter of the world's coastline, from where it can extend hundreds of kilometres out to sea. Humans aren't well adapted to seeing at night, which might make the effects of skyglow seem (A). But many marine and coastal organisms are highly (B) to low light. Skyglow could be changing the way they perceive the night sky, and ultimately affecting their lives.

We tested this idea using the tiny sand hopper*, a coastal crustacean* which is known to use the moon to guide its nightly food-seeking trips. Less than one inch long, sand hoppers are commonly found across Europe's sandy beaches and named for their ability to jump several inches in the air. They bury in the sand during the day and emerge to feed on rotting seaweed at night. They play an important role in their ecosystem by breaking down and recycling nutrients from stranded algae* on the beach.

In our study, we recreated the effects of artificial skyglow using a white LED light in a diffusing sphere that threw an even and dim layer of light over a beach across 19 nights. During clear nights with a full moon, sand hoppers would naturally migrate towards the shore where they would encounter seaweed. Under our artificial skyglow, their movement was much more random.

They migrated less often, missing out on feeding opportunities which, due to their (3) role as recyclers, could have wider effects on the ecosystem. Artificial skyglow changes the way sand hoppers use the moon to navigate. But since using the moon and stars as a compass is a common trait among a diverse range of sea and land animals, including seals, birds, reptiles, amphibians* and insects, many more organisms are likely to be vulnerable to skyglow. And there's evidence that the Earth at night is getting brighter. From 2012 to 2016, scientists found that Earth's artificially lit outdoor areas increased by 2.2% each year.

As researchers, we aim to unravel how light pollution is affecting coastal and marine ecosystems, by focusing on how it affects the development of different animals, interactions between species and even the effects at a molecular level. Only by (4) understanding if, when and how light pollution affects nocturnal life can we find ways to mitigate the impact.

注 nocturnal 夜間の, 夜行性の; dung beetles フンコロガシ
clownfish クマノミ; sand hopper ハマトビムシ
crustacean 甲殻類; algae 藻類
amphibians 両生類

問 1 下線部(1)について、人間以外の生物への影響として本文の内容に合致しないものを選択肢の中から一つ選び、記号で答えなさい。

- (あ) Bats fail to evade predators effectively when eating moths.
- (い) Clownfish experience problems breeding at night.
- (う) Dung beetles get confused and don't know where to go.
- (え) Fish face a greater risk to be eaten by other fish that prey on them.

問 2 下線部(2)の内容と合致するものを選択肢の中から全て選び、記号で答えなさい。

- (あ) It has been researched by scientists using sand hoppers and LED lights.
- (い) It is detectable only from far out in the sea.
- (う) It is noticeable from the city shining above the distant countryside.
- (え) It is produced by the scattering of artificial light at night.

問 3 空所(A)と(B)に入る最も適切な語句の組み合わせを選択肢の中から一つ選び、記号で答えなさい。

- | | |
|-------------------------|-------------------|
| (あ) (A) attractive | (B) insensitive |
| (い) (A) insignificant | (B) resistant |
| (う) (A) invisible | (B) attracted |
| (え) (A) negligible | (B) sensitive |

問 4 下線部(3)を、They が指している内容を明らかにしたうえで日本語に訳しなさい。

問 5 下線部(4)を日本語に訳しなさい。

問 6 本文の内容と合致する文を選択肢の中から二つ選び、記号で答えなさい。

- (あ) A third of the people in the world can't see the Milky Way due to the interference of artificial light.
- (い) Over time, sea animals eventually get used to artificial light.
- (う) Researchers have shown that artificial light across the world has increased.
- (え) Sand hoppers became more cautious under artificial skyglow compared to natural moonlight.
- (お) Sand hoppers eat stranded fish, contributing to nutrient cycles in marine ecosystems.
- (か) Skyglow can shine even brighter than direct light on beaches to the point that marine and coastal creatures are severely affected by the light.

Ⅱ 次の文章は言語と社会について書かれたものである。この文章を読んで、問1～6に答えなさい。(配点35点)

Each of us has a mother tongue, which we speak within our own language community. But what happens when two communities that don't speak each other's language come into contact and need to talk? Sometimes they can learn enough of each other's language to get by, but sometimes that's not possible — for example, what if there are three communities in contact, or five or more? In many cases they resort to a lingua franca, a kind of bridge language that is distinct from the mother tongues of each group. An example from recent history is French, which was used from the seventeenth century until after World War I as the language of diplomacy in Europe. Written Classical Chinese served for an even longer period as a diplomatic lingua franca in countries bordering on China. Today's best example of a lingua franca is undoubtedly English, which supports international communication in fields ranging from aviation* to business to rock music.

So how do lingua francas come about? About ten thousand years ago, as ⁽¹⁾ agriculture and stock-breeding increasingly replaced hunting and gathering, human groups became larger and more hierarchical, and had more occasion to interact with neighboring groups that had different mother tongues. In some cases, perhaps, the groups were brought into contact by some dominant power — such as a regional strong man, or an early empire. In others the contact may have arisen spontaneously, as networks of markets came into existence. Later on — since maybe five thousand years ago — another motive for intergroup contacts emerged: enthusiastic religious believers conceived it as their duty to pass on valuable knowledge of spiritual life to strangers. So imperialists, merchants, and missionaries have all been motivated to establish communication beyond their mother-tongue groups. A lingua franca is a technical fix ⁽²⁾ that helps overcome language barriers across a set of groups that is too large — or too recently united — to have a common language. Performing that fix is the job of a new kind of specialist who must have begun to appear around this time: (A), who

learned the regional lingua franca in addition to their mother tongue and used it to communicate with (A) in other groups.

Sometimes a lingua franca replaces the mother tongues it bridges. ⁽³⁾Latin, for example, spread far and wide through the settlement of soldiers within the Roman Empire. It gradually became a mother tongue throughout western Europe. But for Latin to remain a common language over so large an area, the groups that spoke it as a mother tongue would have had to remain in contact. This didn't happen. Germanic conquests after the fifth century broke the Roman Empire into distinct regions that had little to do with one another, and Latin eventually broke up into distinct dialects and languages, like French, Italian, Spanish, and Catalan.

A lingua franca may be a language like Latin or Sanskrit, taught according to strict rules, and capable of surviving for many centuries with little change. On the other hand, it need not be a fully developed language at all. An important subcategory of lingua francas is ⁽⁴⁾pidgins, which result when people who lack a common tongue make up a new one out of pieces of the languages they already know. The first language to be known specifically as "lingua franca" was a medium of this kind. It was a kind of simplified and highly mixed Italian, used by traders and others in the eastern Mediterranean around the year 1000. Such a loosely structured language may change unpredictably; communication depends more on (B) and (C) than on a clearly shared grammar and vocabulary.

注 aviation 航空産業

問 1 下線部(1)の答えとして本文の内容に合致しないものを選択肢の中から一つ選び、記号で答えなさい。

- (あ) Communities did not share a common language.
- (い) Empires were often conquered by other empires.
- (う) Religious leaders insisted on using their own language.
- (え) Trade partners needed to communicate in emerging markets.

問 2 下線部(2)を日本語に訳しなさい。

問 3 二箇所の空所(A)に入る最も適切なものを選択肢の中から一つ選び、記号で答えなさい。両方ともに同じものが入る。

- (あ) imperialists
- (い) interpreters
- (う) invaders
- (え) inventors

問 4 下線部(3)の Latin はなぜ西ヨーロッパで使われなくなったのか。その理由として最も適切なものを選択肢の中から一つ選び、記号で答えなさい。

- (あ) As a result of the Germanic conquests, people came to speak German instead.
- (い) Latin-speaking communities lost contact because they separated into their own regions.
- (う) Roman Empire soldiers did not enforce the use of Latin, so people spoke their local dialects.
- (え) The Roman Empire wanted to encourage more cultural diversity in the region.

問 5 下線部(4)を本文の内容に即して、70 字以内の日本語で説明しなさい。ただし、句読点も 1 字に数える。

問 6 空所(B)と(C)に入る最も適切な語句の組み合わせを選択肢の中から一つ選び、記号で答えなさい。

- (あ) (B) cooperative imagination (C) mutual good will
- (い) (B) environmental management (C) sustainable development
- (う) (B) group identity (C) older generations
- (え) (B) hierarchical authority (C) ethnic unity

Ⅲ 次の文章を読んで、問1～3に答えなさい。(配点30点)

In the following passage, Marianne and Ken are longtime friends who have grown up in the same small town in Ireland.

Marianne climbs out of the shower now and wraps herself in the blue bath towel. The mirror is steamed over. She opens the door and Ken looks back at her.

“Is something up?” Marianne says.

(1) “I just got this email.”

“Oh? From who?”

Ken looks dumbly at the laptop and then back at her. His eyes look red and sleepy. He’s sitting with his knees raised up under the blanket, the laptop glowing into his face.

“Ken, from who?” she says.

“From this university in New York. It looks like they’re offering me a place on the Master’s of Fine Arts. You know, the creative writing program.”

Marianne stands there. Her hair is still wet, soaking slowly through the cloth of her blouse. “You didn’t tell me you applied for that,” she says.

Ken just looks at her.

“(A)” Marianne says. “I’m not surprised they would accept you. I’m just surprised you didn’t mention it.”

Ken nods, his face inexpressive, and then looks back at the laptop. “I don’t know,” he says. “I should have told you but I honestly thought it was such a long shot.”

(2) “Well, that’s no reason not to tell me.”

“It doesn’t matter,” Ken adds. “It’s not like I’m going to go. I don’t even know why I applied.”

Marianne lifts the towel off the wardrobe door and starts using it to massage the ends of her hair slowly. She sits down at the desk chair.

“(B), okay?” Ken says. “Sometimes I feel embarrassed telling you stuff like that because it just seems stupid. To be honest, I still look up to you a lot. I don’t want you to think of me as, I don’t know, out of my mind.”

(3) (4) Marianne squeezes her hair through the towel, feeling the coarse, grainy texture of

the individual strands. "You should go," she says. "To New York, I mean. You should accept the offer. You should go."

Ken says nothing. She looks up. The wall behind him is yellow like butter. "No," he says.

"I'm sure you could get funding."

"(C). I thought you wanted to stay here next year."

"I can stay, and you can go," Marianne says. "It's just a year. I think you should do it."

Ken makes a strange, confused noise, almost like a laugh. He touches his neck. Marianne puts the towel down and starts brushing the knots out of her hair slowly.

"That's ridiculous," Ken says. "I'm not going to New York without you. I wouldn't even be here if it wasn't for you."

(D), Marianne thinks, he wouldn't be. He would be somewhere else entirely, living a different kind of life.

"I'd miss you too much," Ken says. "I'd be sick, honestly."

"At first. But it would get better."

They sit in silence now, Marianne moving the brush methodically through her hair, feeling for knots and slowly, patiently untangling them. There's no point in being impatient anymore.

"You know I love you," says Ken. "I'm never going to feel the same way for someone else."

Marianne nods, okay. He's telling the truth.

"To be honest, I don't know what to do," Ken says. "Say you want me to stay and I will."

Marianne closes her eyes. He probably won't come back, she thinks. Or he will, differently. What they have now they can never have back again. But for her the pain of loneliness will be nothing to the pain that she used to feel, of being unworthy. He brought her goodness like a gift and now it belongs to her. Meanwhile his life opens out before him in all directions at once. They've done a lot of good for each other. Really, she thinks, really. People can really change one another.

"You should go," Marianne says. "I'll always be here. (E)."

問 1 下線部(1)~(4)について、本文中の意味に最も近いものを選択肢の中からそれぞれ一つ選び、記号で答えなさい。

(1) Is something up?

- (あ) Are you going somewhere?
- (い) Are you okay?
- (う) Are you still up?
- (え) Did something drop and hit you?
- (お) Did you hear that sound?

(2) a long shot

- (あ) a missed opportunity
- (い) an honest statement
- (う) an impossible task
- (え) a slow progress towards a goal
- (お) a small chance of success

(3) look up to

- (あ) confuse
- (い) follow
- (う) observe
- (え) respect
- (お) trust

(4) out of my mind

- (あ) childish
- (い) depressed
- (う) foolish
- (え) surprised
- (お) unfocused

問 2 空所(A)～(E)のそれぞれに入る最も適切なものを、選択肢の中から一つ選び、記号で答えなさい。ただし、同じ記号は一度しか使えない。

- (あ) He's right
- (い) I don't know why you are saying this
- (う) I mean, congratulations
- (え) I'm sorry I didn't tell you
- (お) You know that

問 3 下線部(5)を日本語に訳しなさい。

IV Read the following passage and answer the questions in English. (配点 25 点)

Traditionally favored by private institutions, school uniforms are being adopted by US public schools in increasing numbers. According to a 2020 report, the percentage of public schools that required school uniforms jumped from 12% in the 1999-2000 school year to 20% in the 2017-18 school year.

Supporters of school uniforms say that they create a “level playing field” that reduces socioeconomic inequalities and encourages children to focus on their studies rather than their clothes.

Opponents say school uniforms prevent students from expressing their individuality, and have no positive effect on behavior and academic achievement.

- (1) Based on this passage, what does “level playing field” mean? Write around 40 words.

- (2) What do you think about school uniforms? Are you for or against them? Explain your opinion with reasons based on your personal experience, using around 70 words.

