

福井大学 前期

平成 27 年度入学者選抜学力検査問題

外 国 語

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| 英 語 |
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(医 学 部)

注 意 事 項

- 1 試験開始の合図があるまでこの冊子を開いてはいけない。
- 2 問題はⅠからⅣまでである。
試験開始の合図のあとで問題冊子の頁数(1～8頁)を確認すること。
- 3 解答は必ず解答用紙の所定の欄に記入すること。
所定の欄以外に記入したものは無効である。
- 4 解答用紙は持ち帰ってはいけない。
- 5 問題冊子は持ち帰ってよい。

I 次の英文を読み、空所(1)から(15)を補うのに適切な1語を下の語群内の(a)から(o)より選び、記号で答えなさい。なお、(15)は2か所あり、同じ語が入ります。

In Robib, Cambodia, villagers are getting medical advice from the world's best doctors. Schoolchildren are seeing their country's most famous landmarks* for the first time. And the village economy is taking off, fueled by the sale of its handmade silk scarves on the global market. All these (1) are coming via motorcycle—Internet-enabled motorcycles. A wireless network connects computers in the village with computer chips on each of the five motorcycles. Each vehicle has a transmitter that allows it to upload and download e-mail and data, as it passes by village computers. At the end of the day the bikes (2) to a hub where they upload the information received. The next morning they download e-mail and data from the hub and take it out to the villages for transmission.

Villages like Robib have been described as “leapfroggers”: communities or even whole countries in the developing world that are using information and communication technologies to leapfrog* directly from being an agricultural to an information economy. It's a (3) that combines technology high and low in innovative ways, and is generating not only economic benefits but a new world of educational, social and political opportunities. Meanwhile, in highly developed countries, the information economy has emerged from long (4)—farm economies made room for craftsmen and artisans, who gave way to industrial production, and manufacturing has yielded to the rise of an information and (5)-based economy. Economists and development experts wonder whether the developing world can—or should—(6) the same path. Widespread industrial development would still leave much of Africa, Asia or Latin America a generation behind Europe and North America.

Of greater (7) is the potential environmental impact of widespread industrialization: large-scale factory production in the developing world could greatly increase global energy consumption and pollution levels, particularly if factories use cheaper and dirtier production methods. Information and communications technologies provide an alternative to this environmental and economic (8). The hardware, software and networks that have propelled* developed economies out of the industrial era and into the information age are now promising to take the developing world directly from agrarian* to post-industrial development.

The same satellite networks that (9) remote villages to urban markets can bring classroom education to communities too small or poor to support secondary schools. The cellphone systems that power community businesses can connect patients or doctors, or remote family members. The Internet kiosks* that access a global marketplace can also be used to access political information or organize grassroots* campaigns in emerging (10).

Societies that place a high value on education, like Vietnam, are at an advantage, because a highly educated population is ready for work in a knowledge-based economy. Bangalore, India, is the best-case scenario. Recognized as the Silicon Valley of the developing world, Bangalore has parlayed* India's (11) of well-educated, tech-savvy*, English-speaking programmers into a massive centre of interlocking* programming shops, call centres, and tech companies. While Bangalore's technological, educational and linguistic advantages have given it a head start on leapfrogging, (12) that lack those advantages stand to gain even more from the creative use of technology. Indeed, the countries that stand to benefit most from a leapfrogging (13) are those with limited IT infrastructure, limited education access, and limited literacy rates*.

How does that kind of technology (14) daily life? Just look at what happened in the village of Nallavadu. Vijayakumar Gunasekaran, the son of a Nallavadu fisherman, learned of earthquake and tsunami in December 2004 from his current home in Singapore. When Gunasekaran called home to warn his family, they passed along the warning to fellow villagers—who used the village's telecentre to broadcast a community (15). Thanks to that (15), the village was evacuated*, ensuring that all 3,600 villagers survived.

—From Alexandra Samuel, “Leapfrogging the Technology Gap,” *Toronto Star*, January 17, 2005, 一部改変.

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|--------------------|------------------------|-----------------|
| Notes: landmark 史跡 | leapfrog 飛び越す | propel 駆り立てる |
| agrarian 農業の | kiosk 売店 | grassroots 草の根の |
| parlay 活用する | tech-savvy テクノロジーに精通した | |
| interlocking 連動する | literacy rate 識字率 | evacuate 避難する |

語 群

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|---------------|------------|--------------|---------------|-----------------|
| (a) affect | (b) alarm | (c) benefits | (d) concern | (e) democracies |
| (f) evolution | (g) follow | (h) link | (i) nightmare | (j) phenomenon |
| (k) regions | (l) return | (m) service | (n) strategy | (o) wealth |

II 次の英文を読んで下の質問に答えなさい。ただし、問2以外は日本語で解答すること。

I came home the other night grabbing a piece of paper towel with a mother's cell-phone number on it. I had been precepting* in the residents'* pediatric primary care clinic*, and an intern* had presented a patient: a 20-month-old boy who had been brought in by his mother because he was vomiting*. He'd thrown up seven times since 2 am that morning. No diarrhea*, but he wasn't eating or drinking much. Still, he didn't look dehydrated*. The intern said his ears looked infected.

We went in to see the child. He was a sweet boy, sheltering on his mother's shoulder, and he didn't look happy to see me. In fact, he started crying, which allowed me to confirm that indeed he was not dehydrated, since his face was soon wet with tears. I examined him and agreed that his ears looked infected. Yes, I said, good job, I agree, not dangerously dehydrated, I agree, ear infection. And let's remind the mother to encourage him to drink liquids and watch him carefully to make sure he doesn't get dehydrated. I smiled at the mother reassuringly.

But she looked anxious. She had something else she wanted to bring up, something she hadn't told the intern or mentioned to me when I was questioning her. "Doctor, let me ask you one more thing," she said. "It couldn't be that this was from falling down, could it? From falling down the stairs?"

And out came the story: the night before last, the child's brother had come up the stairs from the basement, and when he opened the door, the baby was right there, reaching for something, and he fell forward down the stairs. "I didn't see it," she said, "but I heard the thump* when he fell. And his brother said he got hurt all over his head. But that couldn't be doing this, right?"⁽¹⁾

So we had a problem. One of the danger signs after head trauma* is vomiting. Here was a child who had fallen down a flight of stairs about a day and a half ago and a little more than 24 hours later had begun throwing up repeatedly.

And I was about to send him home with a diagnosis of acute otitis media*.

I could see that I was disappointing the mother when I didn't just wave it away: don't be silly, what (the, thing, have, could, with, do, to, other, one)?⁽²⁾ She had offered up the falling-down-the-stairs story as a "doorknob moment"—the doctor essentially done, her hand (or the patient's) literally or figuratively*⁽³⁾ on the doorknob, and the patient brings up a deliberately by-the-way question that turns the whole thing inside out. So I put her through the story in more detail, and it sounded harmless: just a few wooden steps, the whole flight maybe 3 feet high. The child hadn't been knocked out—a sign that the head trauma was relatively minor. The mother hadn't noticed any changes in how he was walking—though actually, he wasn't walking much.

Head trauma shouldn't give you even a low-grade fever, I told myself. The time course of the vomit wasn't textbook—it had started more than 24 hours after the fall, and it seemed to have resolved after a few hours. And the child looked good, didn't he? Well, he was clearly not dehydrated, which had loomed as the major danger when I walked into the room. But could I go further than that? I asked his mother to put him down for a minute, but when she tried, he began to cry. He pulled up his legs into the fetal position*, and goodbye to any hope of assessing his gait* to confirm that he looked physically normal.

We examined his head for injuries. We went over the story again. Finally, I sent the mother home with prescriptions for amoxicillin* and acetaminophen* and gave her some of the what-to-watch-for signs off the standard head-trauma information sheet: if he starts vomiting again, if he seems less alert than usual, come to the emergency room. I wrote her phone number on a piece of paper towel, saying I'd call her later to see how he was doing.

And I worried. It would be silly to send him to the emergency room or radiology* when the overwhelming odds were that he just had an ear infection. The timing didn't really make sense for a head bleed, I told myself, and he looked like a kid with a viral* syndrome.

Later that night, when I called, the mother was as reassuring as could be: "Oh, Doctor, he's doing great, he's playing, he's running around, he's really acting like himself. He even ate a little bit." No more vomit, no mental-status changes, normal energy level restored.

—From Perri Klass, "The Moral of the Story," *New England Journal of Medicine*, 358, May 29, 2008, 一部改変.

Notes: precept 指導する resident, intern 研修医
 pediatric primary care clinic 小児一次医療診療所
 vomit 嘔吐する diarrhea 下痢 dehydrate 脱水状態になる
 thump ドスンという音 trauma 外傷 otitis media 中耳炎
 figuratively 比喩的に fetal position 胎位 gait 歩き方
 amoxicillin アモキシシリン(抗生物質の一種)
 acetaminophen アセトアミノフェン(鎮痛剤の一種)
 radiology 放射線科 viral ウイルス性の

- 問 1 下線部(1)について、母親が医師に確認しようとしていることは何か明らかにしなさい。
 問 2 下線部(2)の括弧内の単語を並べ替えて、英文を完成させなさい。
 問 3 下線部(3) "doorknob moment" は、一般にどのような言動を指すのか答えなさい。
 問 4 下線部(4)について、"that" が何を示すのか具体的に説明しなさい。
 問 5 下線部(5)について、筆者がなぜ "silly" と思うのか理由を述べなさい。

Ⅲ 次の英文を読んで下の質問に答えなさい。問1は記号で、それ以外は日本語で解答すること。

A wolf's howl is one of the most impressive sounds of nature, yet biologists aren't sure why the animals do it. They're not even sure if wolves howl voluntarily or if it's some sort of reflex*. Now, scientists working with captive* North American timber wolves* in Austria report that they've solved part of the mystery.

Almost 50 years ago, wildlife biologists suggested that a wolf's howls were a way of reestablishing contact with other pack* members after the animals became separated, which often happens during hunts. Yet, observers of captive wolves have also noted that the pattern of howls differs depending on the size of the pack and whether the dominant, breeding wolf is present, suggesting that the animals' calls are not necessarily automatic responses.

Friederike Range, a cognitive ethologist* at the University of Veterinary Medicine in Vienna, was in a unique position to explore the difficult question. Since 2008, she and her colleagues have hand-raised nine wolves at the Wolf Science Center in Ernstbrunn, which she co-directs. "We started taking our wolves for walks when they were 6 weeks old, and as soon as we took one out, the others would start to howl," she says. "So (1)."

Although the center's wolves don't hunt, they do howl differently in different situations, Range says. "So (2)."

The scientists have divided the wolves at the center into two packs. Range and her colleagues first determined each wolf's position within the dominance hierarchy in its pack and the animals' social relationships. The captive wolves do not have families as wild wolves do, and so they form hierarchies. "They have obvious, preferred partners that they play with, groom, and lie close to when sleeping," Range says. The scientists then took each wolf out for three 45-minute walks, spread over several weeks. They removed the wolves in random order, so that the animals could not predict which one in their pack was going to leave. The researchers also set up a control situation by placing each of the wolves in an adjoining*
(1) holding area again on three occasions for 45 minutes each time. The rest of the pack could not see the wolf in this area, but because he or she was nearby in a familiar place, there was no need for the animals to communicate.

In almost all cases, the pack began to howl within the first 20 minutes after a member was led away on a walk, Range says. But the one out for a stroll usually did not return the call. Those left behind howled in 26 of the 27 walking trials, but only two times during the control trials. The scientists kept careful track of which wolves were actually howling. Overall, the animals did most of their howling when the pack's dominant member went for a walk. Individual wolves also howled more when the wolf that was led away was his or her

preferred pal—which means that the wolves aren’t simply howling because others are. “It’s not a contagious* response,” Range says. “(3), and the howling patterns reflect that.”

(2) Thinking that the stress of separation likely triggered the wolves’ howls, the scientists tested the animals’ levels of the stress hormone cortisol* by collecting saliva* samples 20 minutes after each trial began. “We’ve trained them to let us put a stick with cotton on the end into their mouths and pull it around,” Range says. “I thought stress would be connected to the amount of howling, but (4).” The wolves’ cortisol levels rise sharply when the dominant animal was taken for a walk, but not when their preferred partner was led away. Despite their numerous howls in the latter situation, they were apparently not stressed. And that means that the wolves’ howls aren’t like the robotic responses of Pavlov’s dogs*, which salivated* when the dinner bell rang. Instead of always being a simple physiological* stress response, a wolf’s howl is at times more voluntary and driven by social factors, the team reports in *Current Biology*.⁽³⁾ It’s strategic, not emotional,” Range says. “They’re trying to contact individuals that are important to them and reform the pack. And (5).”

—From Virginia Morell, “Decoding the Call of the Wild,” *Science*, August 22, 2013, 一部改変.

Notes: reflex 反射運動 captive 捕獲された timber wolf シンリンオオカミ
pack 群れ cognitive ethologist 認知動物行動学者
adjoining 隣接する contagious 広まっていく
cortisol コルチゾール(副腎皮質から分泌されるホルモン)
saliva 唾液 Pavlov’s dog 「パプロフの犬」(条件反射)
salivate 唾液が出る physiological 生理的な

問 1 本文の空所(1)～(5)に入る最も適切なものを下のA～Eからそれぞれ1つずつ選び、記号で答えなさい。ただし、文頭に来る語も小文字で記している。

- A. we also wanted to understand these variations in their howling
- B. social relationships are very important to them
- C. they have some control over how much they howl
- D. immediately we became interested in why they howl
- E. that’s not always the case

問 2 かつて専門家たちはオオカミが遠吠えをする理由をどのように理解していたのか述べなさい。

問 3 Range とその同僚の実験において、彼らは、初期段階で何を決定したのかを明らかにしなさい。

- 問 4 下線部(1)について、筆者は何を“control situation”と呼んでいるかを具体的に述べなさい。
- 問 5 Rangeらの実験で明らかになったオオカミが顕著に遠吠えをする状況を二つ示しなさい。
- 問 6 下線部(2)を訳しなさい。
- 問 7 下線部(3)について、Rangeがこのように述べた理由を説明しなさい。

IV 日本の人口は、高齢化と出生率低下のため、2014年の1億2700万人から2080年には6500万人まで半減すると予想されています。この人口減少は日本にどのような影響をもたらすでしょうか。また、あなたは、この問題にどのような対策を提案しますか。これらの質問についてあなたの考えを90～100語の英文で述べなさい。なお、文末に使用した語数を記すこと。