英

1 次の英文を読み、設問に答えよ。

Although clown fish are conceived on coral reefs, they spend the first part of their lives as larvae drifting in the open ocean. The fish are not yet orange, striped, or even capable of swimming. They are still plankton, a term that comes from the Greek word for "wanderer," and wander they do, drifting at the mercy of the currents. When the baby clown fish grow big enough to swim against the tide, they hurry home. The fish can't see the reef, but they can hear its snapping and popping. These noises make up the soundscape of a healthy reef, and larval fish rely on these soundscapes to find their way back to the reefs, where they will spend the rest of their lives—that is, if they can hear them.

But humans—and their ships, seismic surveys, air guns, pile drivers, dynamite fishing, drilling platforms, speedboats, and even surfing—have made the ocean an unbearably noisy place for marine life. This was the conclusion of an extensive review of the frequency and intensity of the impacts of human-made ocean noise published in February 2021 in the journal *Science*. The paper, a collaboration among 25 authors from across the globe and various fields of marine acoustics, is the largest synthesis of evidence on the effects of oceanic noise pollution.

Human noise often drowns out the natural soundscapes, putting marine life under immense stress. In the case of baby clown fish, the noise can even doom them to wander the seas without direction, unable to find their way home. "The cycle is broken," said Carlos Duarte, a marine ecologist at the King Abdullah University of Science and Technology in Saudi Arabia and the lead author of the paper. "The soundtrack of home is now hard to hear, and in many cases has disappeared."

In the ocean, visual cues disappear after tens of meters, and chemical cues dissipate after hundreds of meters. But sound can travel thousands of kilometers and link animals across oceanic basins and in darkness, Dr. Duarte said. As a result, many marine species are perfectly adapted to detect and communicate with sound. Dolphins call one another by unique names. Toadfish hum. Bearded seals trill. Whales sing.

Scientists have been aware of underwater human-made noise, and how far it spreads, for around a century, according to Christine Erbe, the director of the Center for Marine Science and Technology at Curtin University in Perth, Australia, and an author of the paper. But early research on how noise might affect marine life focused on how individual large animals responded to temporary noise sources, such as a whale taking a detour around oil rigs during its migration. The new study maps out how underwater noise affects countless groups of marine

life, including zooplankton and jellyfish. “The extent of the problem of noise pollution has only recently dawned on us,” Dr. Erbe wrote in an email.

The idea for the paper came to Dr. Duarte seven years ago. He had been aware of the importance of ocean sound for much of his long career as an ecologist, but he felt that the issue was not recognized on a global scale. Dr. Duarte found that the scientific community that focused on ocean soundscapes was relatively small. Moreover, their areas of research were separated, with marine mammal vocalizations in one corner, and underwater seismic activity, acoustic imaging, and policymakers in other, distant corners. Dr. Duarte wanted to bring together all the evidence they had gathered into a single conversation; maybe something this grand would finally result in policy changes. The authors screened more than 10,000 papers to ensure they captured every bit of marine acoustics research from the past few decades, according to Steve Simpson, a marine biologist at the University of Exeter in England and an author of the paper. Patterns quickly emerged demonstrating the harmful effects that noise has on almost all marine life. “With all that research, you realize you know more than you think you know,” he said.

Marine life can adapt to noise pollution by swimming, crawling, or oozing away from it, which means some animals are more successful than others. Whales can learn to avoid busy shipping lanes and fish can escape from the noise of an approaching fishing vessel, but creatures on the ocean floor like slow-moving sea cucumbers have few options. If the noise settles in more permanently, some animals simply leave for good. Even temporary sounds can cause permanent hearing damage in the sea creatures unlucky enough to be caught in the acoustic wake. Both fish and marine mammals have hair cells which are sensory receptors for hearing. Fish can regrow these cells, but marine mammals probably cannot.

Luckily, unlike greenhouse gases or chemicals, sound is a relatively controllable pollutant. “Noise is about the easiest problem to solve in the ocean,” Dr. Simpson said. “We know exactly what causes noise, we know where it is, and we know how to stop it.” Many solutions to human-made noise pollution already exist, and are even quite simple. “Slow down, move the shipping lane, avoid sensitive areas, change propellers,” Dr. Simpson said.

The authors hope the review connects with international policymakers, who have historically ignored human-made noise as a significant stressor on marine life. The United Nations Law of the Sea does not mention noise among its list of cumulative impacts. The U.N.’s 14th sustainable development goal, which focuses on underwater life, does not explicitly mention noise, according to Dr. Kerri Seger of Applied Ocean Sciences. “The U.N. had an ocean noise week where they sat

down and listened to it and then went on to another topic," she said.

The paper in *Science* went through three rounds of editing, the last of which occurred after COVID-19 had created many unplanned experiments. Shipping activity slowed down, the oceans fell relatively silent, and marine mammals and sharks returned to previously noisy waterways where they were rarely seen. "Recovery can be almost immediate," Dr. Duarte said. When warships and other human-made noises cease, sea grass meadows have a soundscape entirely their own. In the daytime, the photosynthesizing meadows generate tiny bubbles of oxygen that rise up the water column, growing until they burst. All together, the popping bubbles make a sparkling sound like many little bells, signaling larval fish to come home.

問1 *Choose the best answer based on the reading.*

1. To return to their home, what do baby clown fish do?
   A. Wander the ocean searching for plankton.
   B. Drift with the water currents.
   C. Make snapping and popping sounds.
   D. Listen for the sounds of the reefs.

2. What is significant about the recent review published in the journal *Science*?
   A. It identifies the many different kinds of human activity in the oceans.
   B. It describes how various forms of pollution created by humans are damaging the ocean.
   C. It is the largest combination of data illustrating the problem of oceanic noise pollution.
   D. It documents how marine life is adapting to the noisy ocean environment.

3. What does Carlos Duarte mean by "The cycle is broken"?
   A. Fish are creating a new home environment.
   B. Fish can no longer return to their home.
   C. The frequency and intensity of the ocean tides change.
   D. Fish lose their hearing due to water pollution.

4. Why is sound important to marine animals?
   A. It connects them over long distances.
   B. It strengthens their visual cues over hundreds of meters.
   C. It supplements their chemical cues over thousands of meters.
   D. It helps marine animals adapt to visual and chemical cues.

5. What did early research on underwater human-made noise investigate?

A. The different types of human-made noise.

B. The changes in animal behavior over the past one hundred years.

C. How underwater noise affects zooplankton and jellyfish.

D. How individual large marine animals reacted to noise.

6. What was Dr. Duarte's main objective for the paper?

A. To highlight his achievements during a long career as an ecologist.

B. To emphasize the need to separate the various areas of ocean soundscape research.

C. To show the importance of ocean sounds for marine mammals.

D. To integrate the various findings of specific areas of marine acoustics research.

7. How does the noisy underwater environment affect marine life?

A. Some types of marine life manage to adapt.

B. Marine mammals improve their ability to hear.

C. Sea cucumbers move away.

D. Fish lose their hearing permanently.

8. What are the reactions of international policymakers to the noise pollution issue?

A. Policymakers have connected researchers from different areas.

B. Policymakers have generally been inactive.

C. The U.N.'s Law of the Sea focuses on this issue.

D. The U.N. has a goal to decrease marine noise pollution.

9. What impact has the COVID-19 pandemic had on oceanic noise pollution?

A. The COVID-19 virus has spread to some marine species.

B. It has forced researchers in this area to stop their work.

C. It has led to a decrease in oceanic noise pollution.

D. It has led to an increase in oceanic noise pollution.

10. What would be a good title for this passage?

A. The Origin of Oceanic Noise Pollution

B. The Beautiful Marine Soundscapes

C. The Effects of Oceans' Noise on Marine Life

D. Various Kinds of Marine Pollution

英Ⅲ

問2 *Complete the following chart.*

Researchers	Opinions
Christine Erbe	Research on noise and marine life has not focused on (11).
Carlos Duarte	Noise pollution (12).
Steve Simpson	Noise pollution can be reduced (13).
Kerri Seger	The U.N. considers ocean noise (14).

11. A. large sea animals
    B. zooplankton and jellyfish
    C. individual animals rather than the entire population
    D. the extent of the problem of noise pollution

12. A. has not been sufficiently recognized
    B. became an important issue seven years ago
    C. is a relatively new phenomenon
    D. is a relatively rare phenomenon

13. A. by increasing ships' speed
    B. by reducing chemicals in the ocean
    C. more easily than other types of pollution
    D. in the future after we find out what causes it

14. A. as one of the most important issues today
    B. as their 14th sustainable development goal
    C. to be not one of their immediate concerns
    D. worth discussing on a weekly basis

問3 *Mark A for TRUE and B for FALSE for each of the following statements.*

15. Surfing can be a source of oceanic noise pollution.
16. For their paper in *Science*, the authors collected many studies published during the same year.
17. Fish can regrow their sensory receptors for hearing even if they lose them.
18. Bubbles from photosynthesizing meadows help larval fish to breathe.

2 次の 19 ～ 26 の空所に入れる語句として最も適切なものを A ～ D の中から選べ。

19. X: Have you come up with anything interesting for your next project?
Y: I'm too busy right now to think about it, so I only have a (　　) idea.
A. clear　B. vague　C. concrete　D. precise

20. X: Naomi never gave up and worked very hard for the volleyball team.
Y: Right, that's why she won the (　　) of her teammates.
A. admiration　B. declaration　C. determination　D. resolution

21. X: Take a look at the children's room. It's messy again.
Y: Yes. Parents need a lot of (　　).
A. sorrow　B. patience　C. anger　D. despair

22. X: Josh, come here. The smoke alarm won't stop beeping.
Y: Just push the red button on the top to (　　) it.
A. disable　B. enlighten　C. encourage　D. illuminate

23. X: So, we have to present our information as it is.
Y: That's right. The facts should never be (　　) even if you disagree with them.
A. distorted　B. distracted　C. disapproved　D. discharged

24. X: That news site says the new government is doing very well.
Y: Really? But people say the site has a lot of fake news. It seems (　　) to me.
A. unable　B. dependable　C. unreliable　D. responsible

25. X: What should we do with all those cans?
Y: Let's (　　) them all and put them in a plastic trash bag.
A. extinguish　B. crush　C. diminish　D. vanish

26. X: Could you tell us what quality her novels have in common?
Y: Well, her novels are (　　) by humor.
A. corrected　B. compared　C. canceled　D. characterized

英

3 次の 27 ～ 36 の空所に入れる語句として最も適切なものを A ～ D の中から選べ。

27. X: Did you finish the novel? I was thinking about reading it.
Y: I don't recommend it. The ending was (　　).
A. really disappointed　　B. really disappointing
C. real disappointed　　D. real disappointing

28. X: How do you like your coffee?
Y: Frankly speaking, it's a bit weak for me. I like it (　　).
A. less strong　　B. stronger
C. more strong　　D. strongly

29. X: How was the ski trip? Did you have a good time?
Y: It was fun! We skied a lot (　　) the weather wasn't so nice.
A. in spite of　　B. despite　　C. even if　　D. even though

30. X: I think Tom went back home.
Y: That's possible, although he (　　) to the library.
A. must go　　B. must have gone
C. might go　　D. might have gone

31. X: When shall we have our next meeting?
Y: Let's meet again (　　) three days.
A. in　　B. on　　C. at　　D. during

32. X: Can you check my smartphone? It doesn't seem to receive calls.
Y: Let me see . . . Hmm, I don't think there's (　　) wrong with it.
A. everything　　B. nothing　　C. anything　　D. something

33. X: Karen's coming to the meeting today.
Y: Is she? Last week she said she (　　) able to come.
A. isn't　　B. wasn't　　C. wouldn't be　　D. hadn't been

34. X: Is Brian coming to the BBQ this Saturday?
Y: I don't know. I (　　) him two days ago, but I haven't heard back.
A. emailed　　B. email　　C. have emailed　　D. had emailed

35. You need to work (　　) regularly to lose weight.
A. in　　B. on　　C. out　　D. up

36. Because of the bad weather, the football game was (　　) off.
A. turned　　B. called　　C. laid　　D. set

4 それぞれの会話の空所に入れる最も適切な選択肢を A ～ D の中から選べ。ただし，同じ選択肢が 2 箇所に入ることはない。

著作権の都合上，省略。

Cambridge IELTS 3 Student's Book with Answers, Cambridge University Press

A. We should go and visit them at the hospital.

B. She has to remember to water it.

C. Since it's going to be from us, let's split the cost.

D. I'm sure they could use disposable diapers.

Man: I heard you started working at a new beauty salon. How is it?

Woman: It's great. I was tired of just washing towels and sweeping the floor all day at the last place. (40)

Man: Glad to hear that. I'm sure you're making more money than before, too.

Woman: Yes, the pay is much better now. (41)

Man: That's too bad. You had a nice schedule before, didn't you?

Woman: Yes, I already miss not having as much free time. But I've helped getting more than thirty new customers. (42) Hopefully she will give me some time off soon.

A. But I also have to work more.

B. Now I'm actually cutting hair!

C. I got a beautician's license last year.

D. So, my boss is very happy with me.

英

5 次の文章の空所に入れる文として最も適切なものを A ～ D の中から選べ。ただし，同じ文が 2 箇所に入ることはない。

Insects have been around for at least 500 million years. They make up most of all known species on our planet. （ 43 ） Given their diversity and abundance, it is inevitable that insects are intimately involved in all aspects of our planet's ecosystem. For example, 87% of all plant species need insects to transfer pollen, a fine yellow dust, between the male and female parts of the plant. （ 44 ） Insects also break down organic matter, such as fallen leaves, timber, and dead bodies. In turn, insects are also food for a multitude of animals. Although eating insects might sound disgusting to some people, roughly 80% of the world's population regularly consume them. Because of this, humans ought to farm more insects as an alternative to pigs, cows, or chickens. Farming insects is more energy efficient and requires less space and water. （ 45 ） So if we wish to feed the world in the future, we should seriously think about farming insects as a more sustainable option to conventional livestock.

A. In fact, if it weren't for insects, we would have trouble growing fruit and vegetables.
B. To save insects, we need to act now, and we can do this in several ways.
C. In terms of numbers alone, ants outnumber humans by a million to one.
D. In addition, insects are a healthier source of protein than beef.

出典追記：Text as adapted in The insect apocalypse: 'Our world will grind to a halt without them', The Guardian on July 25, 2021 from Silent Earth by Dave Goulson, HarperCollins Publishers

英

6 *Read the following message and answer the questions.*
（1部受験者のみ）

University Dining Hall
Fall 2021 Reopening

At last! After a long COVID-19 quarantine, our beloved university dining hall will reopen for the fall. We have made changes to our operations to protect our customers and employees by limiting contact and allowing more space for physical distancing. These changes include:

1) Offering our menu for online ordering, for pick-up, and for on-campus delivery.
2) Reducing wait times by offering a limited menu for dining in.
3) Providing a cashless and contactless payment experience.
4) Providing hand sanitizers and disposable masks at the entrances.
5) Requiring regular health checkups for all employees; providing them with gloves, masks, etc.

All guests are required to:

- wear a face mask.
- maintain a 2-meter distance from others.
- use hand sanitizers upon entering.

There are *safety ambassadors* who will make sure these safety measures are followed. They will address issues of crowding and guests without a face mask. They will also monitor the frequent cleaning of the order/payment and pick-up areas, restock disposable face masks, and refill hand sanitizers.

Here are some of the other related services offered here at the Dining Hall:

Easy pick-up at the Dining Hall Counter	**Mini-Market**
Get quick, conveniently-packaged breakfast pastries, pizza, and sandwiches. Please note that our take-out menu is more limited than the Dining Hall menu.	While still stocked with groceries and household goods, we now sell hot pre-packaged foods. On-campus delivery possible online or via phone (see below).
Meal delivery	**Campus Café (next to the Dining Hall)**
We're delighted to operate a meal delivery service both on-campus and within a two-kilometer radius from the university. Only Monday-Friday, 7:30 a.m. – 6 p.m. Please call the number below.	Coffee, muffins, and doughnuts for people on-the-go. Take-out only. Monday-Sunday, 7:00 a.m. – 4:00 p.m.

Dining Hall opening hours:
Monday-Friday, 7:00 a.m.-9 p.m.
Saturday & Sunday, 11 a.m.-5 p.m.
Tel: 888-333-7777

出典追記：IU Dining, FALL 2020 Update on New Practices, Indiana University

英Ⅲ

46. What is this announcement about?

A. The protection of cafeteria employees.

B. The new cafeteria menu.

C. Conducting a COVID-19 quarantine.

D. The reopening of a university cafeteria.

47. At the Dining Hall, what countermeasure is intended to decrease waiting time?

A. Wearing a mask.

B. On-campus delivery.

C. Offering breakfast pastries.

D. Fewer items on the menu.

48. What must the Dining Hall staff do?

A. Receive their wages online.

B. Have a regular health checkup.

C. Buy hand sanitizers.

D. Become *safety ambassadors*.

49. What is the main responsibility of *safety ambassadors*?

A. Managing the payment system.

B. Ordering disposable face masks.

C. Making sure safety measures are followed.

D. Buying hand sanitizers when they are empty.

50. Where can you buy groceries?

A. At the Mini-Market.

B. At the Dining Hall Counter.

C. At the Campus Café.

D. At the delivery area.

51. How can you request meal delivery?

A. By emailing their take-out menu.

B. By making a call.

C. By going to the Dining Hall Counter.

D. By using SNS.

52. Where can you get take-out on Sunday at 8 a.m.?

A. At the university radius.

B. At the Mini-Market.

C. At the Campus Café.

D. At the Dining Hall Counter.