

第二級総合無線通信士「英語」試験問題

5問 1時間30分

1. 次の英文を読み、それに続く設問A-1からA-5までに答えなさい。解答は、それぞれの設問に続く選択肢1.から3.までの中から答えとして最も適切なものを一つずつ選び、その番号のマーク欄を黒く塗りつぶしなさい。

Scientists tag sharks to see where they roam in the high seas, but until now they couldn't track the seas' biggest eater: humans. By using ships' position data, researchers have generated the first comprehensive snapshot of industrial fishing's impact around the globe. And it's huge — bigger than scientists thought — according to a new study. Large-scale commercial fishing covers more than 55 percent of the oceans with the world's entire fishing fleet traveling more than 460 million kilometers in total a year — three times the distance between Earth and the sun, according to research presented in a scientific journal.

"The most mind-blowing thing is just how global an enterprise this is," said study co-author Boris Worm, a marine biologist at Dalhousie University in Canada. "It's more like factories that are mass-producing product for a global market and less like hunters that are stalking individual prey." The fishing patterns were gleaned from 22 billion automatic identification system (AIS) signals received via satellites. Before this, scientists had to rely on a sampling of ships' logs and observations, which were spotty. Ships are obeying no-fishing zones and times, although they hover at the edges of marine-protected areas. Fishing tends to drop on holidays including Christmas, New Year's and the Lunar New Year, researchers found.

From 2012 to 2016, the research team collected boat location signals. New laws require ships of a certain size to carry AIS's that every few seconds transmit their location signals, which are received by satellites as a safety measure. Scientists then used artificial learning computer programs to translate that information to show where boats were fishing, how they were moving, what they were likely fishing for and how they caught it. Monitors then checked the data against log books from some ships and they matched, Worm said. It also shows that in the high seas, there's a heavy use of longline fishing, which generally catches more of the top predators like tuna and sharks.

<注> roam 動き回る mind-blowing 圧倒する glean (情報などを)かき集める AIS 船舶自動識別装置
Lunar New Year 旧正月 predator 他の動物を捕食する動物

(設問)

A-1 How did the researchers take the comprehensive snapshot of industrial fishing boats around the globe?

1. They collected location signals of fishing boats transmitted from the boats' own AIS's.
2. They used the data from the log books of some ships which were provided by monitors.
3. They used tagged sharks roaming in the high seas as their roaming patterns coincide with the global fishing map.

A-2 What did the marine biologist, Boris Worm, compare large scale commercial fishing to?

1. Hunters that are stalking individual prey
2. Factories that are mass-producing product for a global market
3. Fishermen fishing on holidays including Christmas, New Year's and the Lunar New Year

A-3 What do the researchers use to translate the information via satellite to show the fishing boats' working positions, their navigational routes, their fishing targets and their ways of catching them?

1. Pictures taken from satellites
2. Automatic identification systems
3. Artificial learning computer programs

A-4 What does the translation of the data show in addition to the information on the working locations and movements of fishing boats?

1. It also shows ships are not obeying no-fishing zones and times.
2. It also shows the fishing boats in the high seas are heavy users of longline fishing.
3. It also shows the fishing patterns are as large as many marine biologists have anticipated.

A-5 According to the article, which of the following sentences is correct?

1. Large scale commercial fishing covers up to 55 percent of the oceans.
2. Even now researchers have to rely solely on a sampling of ships' logs and observations.
3. The annual combined distance traveled by the world's fishing fleet is more than three times that between Earth and the sun.

2. 次の英文A-6からA-9までは、無線通信業務に関する国際文書の規定文の趣旨に沿って述べたものである。この英文を読み、それに続く設問に答えなさい。解答は、それぞれの設問に続く選択肢1.から3.までの中から、答えとして最も適切なものを一つずつ選び、その番号のマーク欄を黒く塗りつぶしなさい。

A-6 Signals for testing and adjustment shall be chosen in such a manner that no confusion will arise with a signal, abbreviation, etc., having a special meaning defined by the Radio Regulations or by the International Code of Signals. 注) abbreviation 略語

(設問) When testing or adjustment is to be conducted, how are signals chosen for that?

1. Any signal which may be mistaken for one defined internationally shall be avoided.
2. Signals for testing and adjustment shall be selected from among those defined internationally.
3. Signals to be used for testing or adjustment should be declared beforehand according to the relevant international regulations.

A-7 In MF and HF bands, distress alert attempts using DSC may be sent as a single-frequency attempt or a multi-frequency attempt on up to six frequencies within one minute. In VHF bands, only single-frequency call attempts are used. The distress alert will repeat automatically at random intervals, a few minutes apart, until an acknowledgement sent by DSC is received.

(設問) Which of the following is correct with regard to DSC distress alert attempts?

1. The distress alerts in VHF bands may be sent on multiple-frequencies as well as a single frequency.
2. The distress alert in any of the MF, HF and VHF bands will continue to be sent automatically until an acknowledgement sent by DSC is received.
3. The multi-frequency distress alert attempts in MF and HF bands are allowed to be made as many as six times before reception of an acknowledgement sent by DSC.

A-8 Should there be doubt concerning the reception of the distress message, it should also be transmitted on any frequency available on which attention might be attracted. Before changing frequency, however, adequate time should be allowed for reply.

(設問) According to the instruction described above, how should the distress message be transmitted if the reception of the message is uncertain?

1. The transmission frequency should be altered quickly so that many frequencies can be tried.
2. The transmission frequency should be changed to any working frequency with sufficient preparation time to protect distress frequencies.
3. It is advisable to transmit the message on a different frequency that other stations may receive but only after having waited long enough for a reply.

A-9 Call signs of aeronautical stations are formed with the name of the airport or geographical name of the place followed, if necessary, by a suitable word indicating the function of the station.

(設問) Which of these statements is true about the call signs of aeronautical stations?

1. If the function of the station needs to be indicated, the call sign will include a word for that.
2. Call signs of aeronautical stations consist of either the airport name or the function of the station.
3. Call signs of aeronautical stations should consist of the name of the airport followed by the name of the place.

3. 次の設問B-1の日本語に対応する英訳文の空欄（ア）から（オ）までに入る最も適切な語句を、その設問に続く選択肢1.から9.までの中からそれぞれ一つずつ選びなさい。解答は、選んだ選択肢の番号のマーク欄を黒く塗りつぶしなさい。

（設問）

B-1 科学者たちは、人間の活動が自然の営みを乱すという事実を長いこと認識してきている。多くの哺乳類たちは、人々との接触を避けるため、離れたところへ移動したり、かなり狭めた範囲で動き回ったりしているのであろう。最近の研究によるとハイキングやキャンプのような活動でさえ、動物たちを脅かし、夜間に行動するように押しやっていることが分かった。

Scientists have long been aware that human activity disrupts natural processes. Many (ア) may migrate to (イ) areas or move about much less to (ウ) contact with people. The latest research found that (エ) activities like hiking and camping can scare animals and (オ) them to become more active at night.

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|-----------|-------------|------------|
| 1. avoid | 2. drive | 3. even |
| 4. hide | 5. local | 6. mammals |
| 7. remote | 8. reptiles | 9. such a |

4. 次の設問B-2の日本語に対応する英訳文の空欄（ア）から（オ）までに入る最も適切な語句を、その設問に続く選択肢1.から9.までの中からそれぞれ一つずつ選びなさい。解答は、選んだ選択肢の番号のマーク欄を黒く塗りつぶしなさい。

（設問）

B-2 極めて薄い生分解性のフィルムを太陽に対する浮遊するシールドとして使用して、グレートバリアリーフを環境による劣化から保護することが可能かもしれない。サンゴ全域をカバーすることはできないが、価値の高い又は高い危機状態にあるサンゴ礁を保護するために小規模な地域での展開は可能であろうと考えられている。

An ultrafine biodegradable film could be used as a (ア) sun shield to protect the Great Barrier Reef from (イ) degradation. It is considered that it cannot cover the (ウ) reef but could be deployed on a smaller (エ) to protect high-value or high-risk (オ) of the reef.

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|------------|------------------|-------------|
| 1. areas | 2. artificial | 3. entire |
| 4. entry | 5. environmental | 6. floating |
| 7. melting | 8. plains | 9. scale |

5. 次の設問B-3の日本語に対応する英訳文の空欄（ア）から（オ）までに入る最も適切な語句を、その設問に続く選択肢1.から9.までの中からそれぞれ一つずつ選びなさい。解答は、選んだ選択肢の番号のマーク欄を黒く塗りつぶしなさい。

（設問）

B-3 遭難通信は、MF、HF及びVHFの地上無線通信の使用並びに衛星技術を用いる通信を使用する。遭難通信は、すべての他の送信に対し絶対的な優先順位を有しなければならない。

Distress communications (ア) the use of (イ) MF, HF and VHF radiocommunications and communications using satellite (ウ). Distress communications shall have (エ) priority over all other (オ).

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|---------------|----------------|------------------|
| 1. absolute | 2. extreme | 3. reception |
| 4. rely on | 5. skills | 6. surface |
| 7. techniques | 8. terrestrial | 9. transmissions |