XRA 109　　第一級海上無線通信士
YRA 109　　第二級海上無線通信士　　「英語」試験問題
ZRA 109　　第三級海上無線通信士

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。

Global warming is likely slowing the main Atlantic Ocean circulation, which has plunged to its weakest level on record, according to a new study. The slowdown in the circulation — a crucial part of the Earth's climate — had been predicted by computer models, but researchers can now observe it. This could make for more extreme weather across the Northern Hemisphere, especially Europe, and could raise sea levels along eastern North America. The slowdown also raises the prospect of a complete circulation shutdown, which would be a dangerous "tipping point," according to the study in a scientific journal. Such a shutdown was the premise of the scientifically inaccurate 2004 disaster movie, "The Day After Tomorrow." Study authors said a collapse is at least decades away but would be a catastrophe. "We know somewhere out there is a tipping point where this current system is likely to break down," said study co-author Stefan Rahmstorf, a climate scientist at the Potsdam Institute for Climate Impact Research in Germany. Some other scientists are skeptical, citing a scarcity of data.

The study by the Potsdam Institute and another study published in the same issue of the scientific journal indicates that the Atlantic's circulation is the weakest it has been in about 1,500 years. And the slowdown is intensifying. Since the middle of the 20th century, the speed at which the ocean moves water has dropped 15 percent, the study found, using cold subpolar water temperatures as an indirect measurement. And it has plummeted in recent years, the study concluded.

It's clear that the circulation is weakening, said hurricane expert Phil Klotzbach, who wasn't part of the studies. Decades ago, that would have meant weaker Atlantic hurricane activity, but that hasn't been happening. This could mean there is a difference in weakening in winter and summer, he said. But MIT's Carl Wunsch said that the paper's "assertions of weakening are conceivable, but unsupported by any data." Kevin Trenberth of the National Center for Atmospheric Research said his recent work blames regular circulation in the atmosphere more than the ocean. He said the Potsdam study doesn't explain year-to-year variability in their measured data, while atmospheric cycles do.

Rahmstorf responds his study averages data over a decade at a time to render year-to-year changes less meaningful. The work shows that it is ocean circulation that drives the changes in atmosphere, not the other way around, he said.

＜注＞　tipping point　転換点　　skeptical　懐疑的な　　plummet　急落する　　MIT　マサチューセッツ工科大学

（設問）

A−1 According to the article, what is one possible outcome of the slowdown of the Atlantic's circulation?
1. The Northern Hemisphere may experience more damaging weather.
2. Sea levels in Eastern Europe are predicted to rise to dangerously high levels.
3. Both summers and winters will probably be much milder in the future, especially in eastern North America.

A−2 How does the Potsdam study describe the shutdown in the Atlantic's circulation?
1. The study's authors believe the shutdown will occur in the next few years.
2. The study set out to prove the disaster movie, "The Day after Tomorrow," was scientifically accurate.
3. Although the shutdown will not happen in the immediate future, there is a real danger it may happen one day.

A−3 What do the studies published in the same issue of the scientific journal cited in the above article say about the speed of the Atlantic's circulation?
1. In recent years the circulation has been slowing down at a greater rate.
2. The circulation started becoming more intense in the middle of the 20th century.
3. Waters in the Atlantic are circulating faster than at any time in the last 1,500 years.

A−4 What does the expert from MIT say about the studies?
1. This expert claims that the data from the studies challenge the idea of global warming.
2. His view is that there are no data to support the study although its claims might be true.
3. He argues that the studies are clear proof that global warming is damaging the world's oceans.

A−5 How do the experts from the Potsdam Institute and the National Center for Atmospheric Research differ in their views?
1. The Potsdam researchers focus on year-to-year changes while the other study measures decades.
2. The expert from the National Center for Atmospheric Research believes that the atmosphere has no impact on year-to-year changes of the ocean temperatures.
3. Rahmstorf says their averaged data indicates the ocean circulation governs the atmosphere, while Trenberth sees it more in terms of regular atmospheric cycles.

2. 次の英文A−6からA−9までは、海上移動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 Normally, in on-scene communications the Search and Rescue (SAR) Mission Coordinator will select SAR-dedicated frequencies for use on-scene, inform the On-Scene Coordinator or SAR facilities, and establish communications with adjacent Rescue Coordination Centers (RCCs) and parent agencies of SAR facilities as appropriate.

（設問） Who is responsible for deciding which frequencies are to be used on an SAR mission?

1. This is the responsibility of the Search and Rescue Mission Coordinator.
2. On-Scene Coordinators must inform the Mission Coordinator of which frequencies are being used.
3. The final decision regarding frequencies is the duty of the appropriate parent agency of the SAR facility concerned.

A−7 Training for the general operator's certificate should include procedures for using propagation prediction information to establish optimum frequencies for communications and monitoring a distress frequency while simultaneously monitoring or working on at least one other frequency.

（設問） What training is required for certification as a general operator according to the above guidance?

1. Training in how to establish the best frequencies for receiving prediction information.
2. Training in how to predict distress communications by receiving such information on working frequencies.
3. Training in how to monitor a distress frequency while using one or more other frequencies at the same time.

A−8 The radio operator performing radio watchkeeping duties shall while on duty regularly check the operation of the radio equipment and its sources of energy and report to the master any observed failure of this equipment.

（設問） What does the above paragraph require the radio operator performing watchkeeping duties to do upon discovering an equipment failure?

1. Any equipment failure that is found must be reported to the master.
2. The radio operator is required to perform further checks on the operation of the radio equipment.
3. The radio operator performing watchkeeping duties shall immediately look for other sources of energy.

A−9 Any mobile station using an emission which satisfies the frequency tolerance applicable to the coast station with which it is communicating may transmit on the same frequency as the coast station on condition that the latter requests such transmission and that no harmful interference is caused to other stations.

（設問） Which of the following is a condition for a mobile station to transmit on the same frequency as the coast station if no harmful interference is caused to other stations?

1. The applicable coast station is able to report all harmful interference.
2. The mobile station shall request a satisfactory frequency tolerance before making such a transmission.
3. The transmission must be requested by the coast station and performed within the same frequency tolerance as the coast station's.

3. 次の設問**B−1**の日本文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10.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 温室効果ガス世界資料センター(WDCGG)は、日本の衛星「いぶき」からの二酸化炭素測定データを提供し始めた。衛星からのデータと地上・船舶・飛行機の観測施設からのデータの統合は、二酸化炭素の全世界的分布の長期的な監視のみならず地域的な放出及び吸収パターンの推定に貢献するであろう。

The World Data Center for Greenhouse Gases (WDCGG) has (ア) providing CO_2 observation data obtained from the Japanese satellite, "Ibuki." Integration of the satellite data and the data obtained from observation facilities on the ground, ships and airplanes will (イ) to not only the long-term monitoring of the global (ウ) of CO_2 (エ) the estimation of regional emission and (オ) patterns.

1. absorption	2. begin	3. begun	4. but also
5. contribute	6. delivery	7. distribution	8. including
9. radiation	10. volunteer		

4. 次の設問**B−2**の日本文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10.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 海水温が上昇したにもかかわらず、2017年におけるグレートバリアリーフの白化は荒廃をもたらした2016年よりも全体を通して少なかったことが研究によって明らかになった。これを科学者は、生物群集の過去の経験が将来の生態学的反応に影響を与える現象である「生態学的記憶」によるものと説明している。

A study has found that bleaching of the Great Barrier Reef (ア) was lower in 2017 than the (イ) year of 2016 in (ウ) of higher water temperatures. The scientist explains this (エ) "ecological memory," the phenomenon by which the past experiences of a community (オ) its future ecological responses.

1. as a whole	2. because	3. by	4. despite
5. devastating	6. extinction	7. in some areas	8. influence
9. inherit	10. spite		

5. 次の設問**B−3**の日本文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10.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 GMDSS無線通信士の資格証明を得ようとする者は、退船、船内火災または一部あるいは全部の無線装置の故障というような非常事態に無線通信業務を提供することができる能力を示すことが要求される。

Every candidate for (ア) of GMDSS radio operators shall be required to (イ) ability to provide radio services in (ウ) such as abandon ship, (エ) on board ship and partial or full break down of radio (オ).

1. antennas	2. certification	3. demonstrate	4. distress
5. emergencies	6. fire	7. flood	8. identification
9. installations	10. speak out		