

航空無線通信士「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。

The world's nights are getting alarmingly brighter — bad news for all sorts of creatures, humans included. A German-led team reported that light pollution is threatening darkness almost everywhere. Satellite observations during five Octobers show Earth's artificially lit outdoor area grew by 2 percent a year from 2012 to 2016. So did nighttime brightness. Light pollution is actually worse than that, according to the researchers, because the imaging sensor on the polar-orbiting weather satellite can't detect the blue wavelengths generated by the new, energy-efficient and cost-saving LED's.

The biological impact from surging artificial light is significant, according to the researchers. People's sleep can be marred, which in turn can affect their health. The migration and reproduction of birds, fish, amphibians, insects and bats can be disrupted. Plants can have abnormally extended growing periods. And forget about seeing stars or the Milky Way, if the trend continues. More and more places are installing outdoor lighting given its low cost and the overall growth in communities' wealth, the scientists noted. The outskirts of major cities in developing nations are brightening quite rapidly, in fact, said Christopher Kyba, the lead author of the study.

Franz Holker of the Leibniz Institute of Freshwater Ecology and Inland Fisheries in Berlin, a co-author, said things are at the critical point. "Many people are using light at night without really thinking about the cost," Holker said. Not just the economic cost, "but also the cost that you have to pay from an ecological, environmental perspective." Kyba and his colleagues recommend avoiding glaring lamps whenever possible — choosing amber over so-called white LED's — and using more efficient ways to illuminate places like parking lots or city streets. For example, dim, closely spaced lights tend to provide better visibility than bright lights that are more spread out.

An instrument on the 2011-launched U.S. weather satellite, Suomi, provided the observations for the study. A second such instrument — known as the Visible Infrared Imaging Radiometer Suite (VIIRS) — was launched in November 2017 on a new satellite by NASA and the National Oceanic and Atmospheric Administration. This latest VIIRS will join the continuing night light study.

<注> marred (質などが)損なわれた amphibian 両生類 outskirts 町の中心から遠く離れたところ

(設問)

A-1 What did the German-led report find?

1. Light pollution is not a problem for people.
2. Light pollution is getting worse in both its extent and brightness.
3. There has been a considerable reduction in light pollution in recent years.

A-2 What does the research say about the impact of LED light?

1. The use of LED's has been the number one cause of light pollution.
2. The study cannot evaluate it precisely because not all wavelengths are measured.
3. Blue wavelength lights generated by LED's themselves do not have any impact on light pollution.

A-3 Which of the following does the article say is a direct consequence of light pollution?

1. People are sleeping much longer than in the past.
2. The Milky Way is becoming more clearly visible in the night sky.
3. Brighter nighttime skies are disturbing the natural rhythms of much wildlife.

A-4 What do the scientists suggest in order to reduce the effect of light pollution?

1. Using more old light bulbs for an ecological, environmental perspective.
2. Reducing the number of amber LED's by replacing them with white LED's.
3. Trying to select amber lights and illuminating places like streets with less bright, closely spaced lights.

A-5 What does the article say about future plans for the study?

1. The study will conclude very shortly.
2. The study will be continued with the latest instrument launched last year.
3. The weather satellite Suomi will be removed from the study soon as it does not have the VIIRS.

2. 次の英文A-6からA-9までは、航空通信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 A flight plan shall be submitted, before departure, to an air traffic services reporting office or, during flight, transmitted to the appropriate air traffic services unit or air ground control radio station, unless arrangements have been made for submission of repetitive flight plans.

(設問) To which authority should flight plans be submitted by an aircraft in flight?

1. Only repetitive flight plans may be submitted to the authorities concerned during flight.
2. When submitted during flight, the plans must go to the air traffic services reporting office.
3. Such plans need to be given to the appropriate air traffic services unit or air ground control radio station.

A-7 Stations with other than continuous hours of operation, engaged in, or expected to become engaged in distress, urgency, unlawful interference, or interception traffic, shall extend their normal hours of service to provide the required support to those communications.

(設問) What are stations working with limited hours of operation required to do when distress or urgency traffic is anticipated?

1. These stations must intercept unlawful interference at all times.
2. Stations operating limited hours shall remain operational in cases of distress or urgency traffic when so required.
3. Stations working with limited hours of operation are required to provide support for distress or urgency traffic only during their normal service hours.

A-8 Where it is necessary for an aircraft station to send signals for testing or adjustment which are liable to interfere with the working of a neighboring aeronautical station, the consent of the station shall be obtained before such signals are sent.

(設問) What may be required when an aircraft station sends signals for testing?

1. An aircraft station may send test signals at any time without restriction.
2. An aircraft station must report the results of test signals to all neighboring aeronautical stations.
3. An aircraft station needs the permission of any nearby aeronautical station whose operation may be affected by the test.

A-9 The aircraft station may call the aeronautical station only when it comes within the designated operational coverage area of the latter. Designated operational coverage is that volume of airspace needed operationally in order to provide a particular service and within which the facility is afforded frequency protection.

(設問) At what point may an aircraft station call an aeronautical station?

1. An aircraft station is permitted to call any aeronautical station at any time.
2. An aircraft station may call an aeronautical station once it has entered the airspace in which that station provides a particular service.
3. An aircraft station may only call an aeronautical station during limited hours of operation when the designated frequencies are protected.

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 航空機は気圧測定に基づいて高度を決定する高度計を使う。高度計のQNE設定は、海面レベルの気圧が1013.2 hPaであることを前提としている。しかしながら、気圧は気象の影響も受ける。パイロットは必要な調整を行うため、飛行場の近く若しくは14,000フィート未満の飛行では航空管制官からの値を用いてQNH設定を行う。

An aircraft uses an altimeter which (ア) the altitude from the measurement of atmospheric pressure. The QNE setting of the altimeter (イ) the air pressure at sea level to be 1013.2 hPa. Atmospheric pressure, (ウ), is also influenced by the weather. When flying close to an (エ) or below 14,000 feet, the pilot sets the QNH to make the necessary (オ) using the value given by the ATC controller.

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| 1. adjustments | 2. aerodrome | 3. aileron |
| 4. assumes | 5. but | 6. determines |
| 7. however | 8. predicts | 9. reduction |

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 国内初の手話によって通信ができる公衆電話機が羽田空港に据え付けられた。その電話システムを使えば、聴覚に問題のある人たちがモニターの前で手話を行うことにより、通訳者が反対側に位置する人にメッセージを音声で伝えることができる。日本財団によると、手話フォンは現在20か国を超える国で利用されており、公共施設で幅広く使われているということである。

The nation's first public phones enabling communications via sign language have been (ア) at Haneda airport. The phone system enables a person with hearing problems to make signs in (イ) a monitor for an interpreter to (ウ) the message by voice to the person on the other end. The Nippon Foundation (エ) the sign-language phone is now in use in more than 20 countries and widely used at public (オ).

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|--------------|---------------|-----------------|
| 1. complains | 2. convey | 3. demonstrate |
| 4. equipment | 5. facilities | 6. front of |
| 7. says | 8. set up | 9. the place of |

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 締約国政府は、国際民間航空が安全にかつ整然と発達するように、また、国際航空運送業務が機会均等主義に基づいて確立されて健全かつ経済的に運営されるように、一定の原則及び取り決めについて合意し、その目的のためにこの条約を締結した。

The contracting governments, having agreed on certain (ア) and arrangements in order that international civil aviation may be developed in a safe and orderly (イ) and that international air transport services may be (ウ) on the basis of equality of (エ) and operated (オ) and economically, have concluded this Convention to that end.

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|----------------|----------------|---------------|
| 1. advantage | 2. established | 3. manner |
| 4. opportunity | 5. politically | 6. principals |
| 7. principles | 8. regulation | 9. soundly |