

令和3年度
一般選抜(前期)

10時00分～12時30分

数 学 ・ 英 語

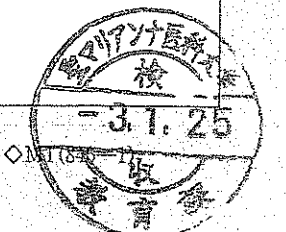
問 題 冊 子

科目名	頁
数 学	1 ～ 7 頁
英 語	10 ～ 16 頁

注 意 事 項

1. 試験開始の合図〔チャイム〕があるまで、この注意をよく読むこと。
2. 試験開始の合図〔チャイム〕があるまで、問題冊子ならびに解答用紙は開かないこと。
3. 試験開始の合図〔チャイム〕の後に問題冊子ならびに解答用紙の全ページの所定の欄に受験番号と氏名を記入すること。
4. 解答はかならず定められた解答用紙を用い、それぞれ定められた位置に問題の指示に従って記入すること。また、解答用紙に解答以外のことを書かないこと。
5. 解答はすべて黒鉛筆を用いてはっきりと読みやすく書くこと。
6. 問題冊子の余白および裏面を計算に利用してもよい。
7. 質問は文字が不鮮明なときに限り受け付ける。
8. 問題冊子に、落丁や乱丁があるときは手を挙げて交換を求めること。
9. 試験開始60分以内および試験終了前10分間は、退場を認めない。
10. 試験終了の合図〔チャイム〕があったとき、ただちに筆記用具を置くこと。
11. 試験終了の合図〔チャイム〕の後は、問題冊子ならびに解答用紙はいずれも表紙を上にして、通路側から解答用紙、問題冊子の順に並べて置くこと。いっさい持ち帰ってはならない。
なお、途中退場の場合は、すべて裏返しにして置くこと。
12. その他、監督者の指示に従うこと。

受験番号		氏 名	
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1 英文を読み、問題に答えなさい。記号以外の問題は日本語で答えなさい。

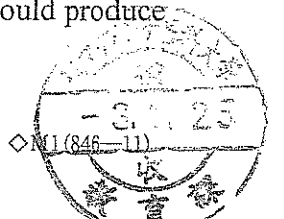
In the fall of 2012, the government of New York City began receiving unusual complaints from the residents of a small strip of land in the borough of Staten Island. People who (1) around a section of Father Capodanno Boulevard, in the South Beach neighborhood, claimed that, when the wind was up, they could hear a noise that (2) something like whistling. Where the sound came from was a big mystery. The noise (3) around before, but it had suddenly appeared and was often very loud. When the wind (4) especially hard at night, some residents even had difficulty sleeping.

Residents had many descriptions for the noise, which was definitely scary. One resident told a local paper, *The Staten Island Advance*, that it sounded like “100,000 people with unlimited air in their lungs blowing through Coke bottles.” Others said it was more like the sound a UFO makes in a movie when it lands. A) The noise was not consistent. It would get louder and softer depending on the wind. Sometimes, it would change pitch. Every so often, more than one note would play at the same time. To many residents, it sounded like a giant musical instrument. The sound could be heard more than a mile away.

The whistling, it turns out, was caused by a building. The Ocean Breeze Athletic Center, an indoor running track, was in the middle of construction when the noise first started. The construction crew had just finished assembling the giant metal skeleton that would form the building’s frame. Because the building was next to the water, it got a lot of wind that blew off of the Atlantic Ocean. Some of this wind blew through parts of the building called “acoustic baffles”—devices designed, B) ironically, to reduce sound produced inside the center. However, when the baffles were exposed to wind, they made a whistling sound. This was the noise the locals were hearing.

The athletic center was not the first building in New York to make a whistling noise. In the late 1980s, another building in the Midtown neighborhood of Manhattan also produced whistling noises. Whistling happens when a stream of air moves through a small hole. The kind of whistling sound produced depends on the size and shape of the hole. The skyscrapers in Midtown had architectural features on their exteriors which contained small holes that wind could pass through. C) This was how the noise was produced.

When they figured out what was wrong, the New York City government, which was responsible for building the athletic center, quickly apologized to the residents of South Beach, Staten Island, for the annoying noise. They had not expected that the building would produce



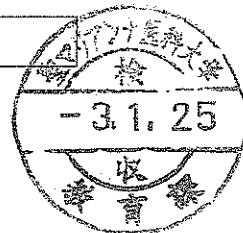
a whistling sound, and promised the problem would be quickly fixed when the building was completed and the acoustic baffles were protected from the wind. “We sincerely regret any annoyance the wind noise may be causing for residents of the area,” the city told residents in a written statement. “We expect to complete the roof by mid-November and the exterior shell by early December.”

However, this estimate was, (5) for the people who had heard the noise, not correct. A few weeks later, Hurricane Sandy hit New York City. Much of Staten Island was flooded. Construction crews that had been building other buildings before the storm were dispatched to help with the cleanup. The site of the arena was also briefly flooded during the storm. Both of these factors delayed construction of the arena by several months, leaving the poor residents of South Beach to put up with the noise for all that time.

One afternoon in December of 2012, a reporter went out to see the arena and listen to the noise. E Finally, the composer reached over and turned off the recording device. “That was beautiful,” he said. “The building was like a giant organ.”

As the reporter and the composer were walking back to their car, they noticed that a psychiatric hospital—a place where people with mental disorders can get treatment—was located just a few blocks from the building. The two of them got curious and walked over to the hospital. What would the people with mental disorders think of the noise? They walked into the building and asked the receptionist what the patients thought of the whistling. “Some of them hate it, but some of them love it,” she said. “There’s one man who’s been here six months. He was ill-tempered, angry at everyone, until that whistling started. Now he’s pleasant as can be. I don’t know what that is. It soothes him, I suppose.”

As of August 2014, construction of the athletic center was nearing completion. The building stopped whistling. However, the sound it made had been preserved on several recordings. G



- [1] 空欄(1)―(5)に入る最も適切なものを選択肢から選び、記号で答えなさい。
- (1) (a) lived (b) was living (c) had lived (d) have lived
 (2) (a) sound (b) sounds (c) sounding (d) sounded
 (3) (a) was not (b) has not (c) has not been (d) had never been
 (4) (a) blows (b) was blowing (c) was blown (d) has been blowing
 (5) (a) badly (b) inaccurately (c) seriously (d) unfortunately

[2] 下線部 A はどのような状況か具体的に説明しなさい。

[3] 下線部 B はどういう点においてか説明しなさい。

[4] 下線部 C を説明しなさい。

[5] 下線部 D が指しているものを挙げなさい。

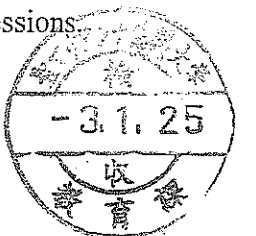
[6] 以下の(a)～(e)の文を空所 E に入るように並びかえ、記号で答えなさい。
 尚、(a) はすでに与えられている。

- (a) The wind was blowing, and the building was whistling loudly.
 (b) He brought a large recording device with him, which he set up 100 yards from the building.
 (c) The composer made modern music—music that often uses many different types of sounds, not just the instruments of a traditional orchestra.
 (d) For a long time, the reporter and the musical composer listened to the whistling sound.
 (e) He brought with him a musical composer.

[7] 下線部 F はどのようなことを受けての発言か説明しなさい。

[8] 空所 G に入る最も適切なものを選択肢から選び、記号で答えなさい。

- (a) The athletic center was delighted to be able to produce such a beautiful whistling sound.
 (b) The city was planning to hold a concert celebrating the completion of construction.
 (c) The musical composer was thinking of turning the whistling into a new song.
 (d) The patients of the psychiatric hospital were invited to join the recording sessions.



2 英文(記事の抜粋)を読み、問題に答えなさい。同じ番号の空欄には同じものが入る。

Researchers (1) the bird, a rose-breasted grosbeak (*Pheucticus ludovicianus*), at the Carnegie Museum of Natural History's Powdermill Nature Reserve, an environmental research center in Rector, Pennsylvania.

Plumage colors usually signal if a grosbeak is male or female, but this bird has both sexes' signature shades. Scientists who (1) the bird saw male coloration—pink wing “pits,” a red breast splash and black wing feathers—on the right side of its body. But the bird's left wing was browner and had yellow “pits,” a color combination found in females, museum representatives said in a statement.

This condition, in which an animal possesses male and female (3) divided down the middle of its body, is called bilateral gynandromorphism. 4) In birds, gynandromorphy is thought to stem from an error during egg formation. Unfertilized eggs typically contain one sex chromosome: a Z or a W (male birds are ZZ, while females are ZW). [5] If this egg is fertilized, it unites with sperm that carry the Z chromosome to produce an embryo with some cells that are ZZ, producing male traits, and some that are ZW, producing female traits, (6).

7) “We caught the bird during normal banding operations,” said Annie Lindsay, Powdermill's Avian Research Center (ARC) bird banding program manager. “The bird received an individually numbered band just like all birds we catch,” Lindsay told Live Science in an email. The scientists recorded the grosbeak's age, sex and body measurements. They then collected feathers for genetic analysis and took photos and video before releasing the bird. “Every member of the banding crew expressed delighted surprise and joy in experiencing the banding of this rare bird,” Lindsay said.

8) Researchers have identified gynandromorphy in many animals, including crustaceans, spiders, birds, butterflies and bees; however gynandromorphs are rare, so very few individual animals express the trait. The ARC has collected and banded birds since 1961, and its dataset holds more than 800,000 records. In that time, scientists have documented only five examples of bilateral gynandromorphs, Lindsay said.

Male rose-breasted grosbeaks are more colorful and more visually striking than females. Their heads and backs are deep black with white flecks, and their snowy breasts are

marked with a splash of vivid crimson under their throats, according to the Cornell Lab of Ornithology. Females, (9), show off earthy tones of brown and cream, with a pale, speckled breast and a white “eyebrow,” according to the Cornell Lab. Interestingly, immature males share some coloration in common with females, such as the white eyebrow and dark speckles around the throat and chest.

[1] Which choice fits gaps (1) the best?

- (a) let go (b) captured (c) hooked (d) arrested

[2] What does the underlined phrase 2) mean?

- (a) special shadows (b) unique features
(c) characteristic colors (d) distinctive patterns

[3] Which choice CANNOT be used in gap (3)?

- (a) traits (b) features (c) qualities (d) customs

[4] From the underlined part 4), what can we understand?

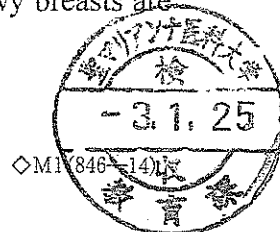
- (a) Stem cell mistakes are responsible for creating birds with two sexes.
(b) Gynandromorphy occurs when adult birds build nests from stems that harm eggs.
(c) A problem with the structure of the egg may cause a bird to be gynandromorphic.
(d) When eggs form, the adult birds mistake another egg for their own, resulting in a chick that is neither completely female nor male.

[5] Put the phrases (a)—(d) in the correct order to make a sentence for [5].

- (a) an egg develops with two nuclei (b) the other a W chromosome
(c) one containing a Z chromosome and (d) but very rarely

[6] Which choice fits gap (6) the best?

- (a) Natural History Magazine reported (b) quoted Natural History Magazine
(c) told Natural History Magazine (d) according Natural History Magazine



- [7] What does the underlined part 7) imply?
- (a) The researchers were hoping to catch a bird like that.
 (b) The researchers just happened to catch the bird.
 (c) The group only seeks out this type of bird for banding.
 (d) This was not a special banding operation.
- [8] From the underlined part 8), what can we understand?
- (a) Although this condition has been found in many types of animals, it is highly unusual.
 (b) Gynandromorphy is a common condition among certain species, and quite a few individuals have it.
 (c) While gynandromorphs are found in many animals, many hide it.
 (d) Many animals are gynandromorphs, although it is rare among some species.
- [9] Which choice fits gap (9) the best?
- (a) nonetheless (b) surprisingly (c) on the other hand (d) in much the same way
- [10] Read the following statements and identify 2 true statements.
- (a) In birds exhibiting bilateral gynandromorphy, the top and bottom half of the birds have different coloration.
 (b) Male grosbeaks have brighter colored plumage than female grosbeaks.
 (c) ARC collects and bands birds in order to collect various data, including their habitats.
 (d) The ARC crew was very astonished to band a bird having gynandromorphy.
 (e) After fertilization, gynandromorphic eggs form two nuclei, one with ZZ cells and one with ZW cells.

3 与えられた状況に関して最も適切な表現を選択肢から選び記号で答えなさい。

- [1] You are giving advice to your friend that she eat moderately.
- (a) It's not better to eat all of which you see.
 (b) It's not good for you to eat everything that you want.
 (c) You had better give yourself less than you want.
 (d) You shouldn't eat all the things what you want to eat.



- [2] You are giving your opinion about the movie because you are not interested in it at all.
- (a) I don't think I will see the movie and watch it on TV.
 (b) I don't want to do neither of seeing the movie at a theater or TV.
 (c) I neither want to see the movie at a theater nor watch it on TV.
 (d) I would rather not to see the movie at a theater or watch it on TV.
- [3] You are asking if Bill was alone when your friend saw him.
- () when you saw him?
- (a) Did you see close to Bill anybody
 (b) Do you know if Bill was together or not with anyone
 (c) How many of the people did you see who were with Bill
 (d) Who was Bill with
- [4] The gate at your house was damaged in the typhoon. You are asking the price to have it fixed.
- (a) Could you give me a written estimate to fix the gate?
 (b) Could you fix for this gate for what price?
 (c) How much does a written estimate cost for the gate fixing?
 (d) How much is the gate for fixing?
- [5] You are a store owner and you are making a sign about social distancing.
- (a) Please keep away 2 meters between other people.
 (b) Please maintain yourself 2 meters among people.
 (c) Please stand up away from people for 2 meters.
 (d) Please stay at least 2 meters away from those around you.

