| مسابقة في مادة اللغة الإنكليزية | الاسم: |
| المدة: ساعتان و نصف | الرقم: |

Part One: Reading Comprehension   **(Score: 12 /20)**

In the following selection, the writer highlights the role satellites play in measuring the effects of climate change on animals. Read it carefully, and then answer the questions that follow.

What Satellites Can Tell about Animals

1 From the Arctic to the Mojave Desert, terrestrial and marine habitats are rapidly changing. These changes impact animals that are adapted to specific ecological habitats, sometimes displacing them or reducing their numbers. From their special vantage point, satellites are particularly well-suited to observe habitat transformation and help scientists forecast impacts on the distribution, abundance and migration of animals.

2 In a press conference at the American Geophysical Union meeting in San Francisco, a group of researchers discussed how detailed satellite observations have facilitated ecological studies of climate change over time. The presenters discussed how changes in the sea ice cover of the Arctic have helped scientists predict a thirty-percent drop in the global population of polar bears over the next 35 years. They also talked about how satellite imagery of declining plant productivity caused by droughts in North America gives hints of how both herbivores and their predators will migrate. Finally, the presenters also discussed how satellite data on plant growth indicate that the concentration of wild reindeer herds in the far north of Russia has not led to the overgrazing of their environment, as previously thought.

3 "When **we** look several decades ahead, climate models predict such profound loss of Arctic sea ice," said Kristin Laidre, a researcher at the University of Washington's Polar Science Center in Seattle. "There is little doubt that this will negatively affect animals such as polar bears throughout much of their range because of their dependence on sea ice," Laidre added.

4 "On short time scales, we can have different responses to the loss of sea ice among subpopulations of polar bears," Laidre said. "For example, in some parts of the Arctic, such as the Chukchi Sea, polar bears appear healthy, fat and reproductive — **this** is probably because the area is very ecologically productive, so you can lose some ice before seeing negative effects on bears. In other parts of the Arctic, like western Hudson Bay, studies have shown that survival and reproduction have declined as a result of the sea ice decline," she added.

5 "It is difficult to predict what population numbers will be in the future, especially for animals that live in vast and remote regions," said Eric Regehr of the U.S. Fish and Wildlife Service in Anchorage, Alaska. "But at the end of the day, polar bears need sea ice to be polar bears. This study adds to a growing body of evidence that the species will likely face significant declines as the loss of their habitat continues," Regehr explained.

6 The southwestern United States is expected to become more prone to droughts due to climate change. As the resulting loss of vegetation will impact herbivores like mule deer, their main predator, the mountain lions, might take an even larger hit.

7 To estimate the numbers and distribution of mule deer and mountain lions in Utah, Nevada and Arizona, David Stoner, a wildlife ecologist at Utah State University, used imagery of plant productivity. He utilized the Moderate Resolution Imaging Spectroradiometer flown on NASA's Terra and Aqua satellites, along with radio-telemetry measurements of animal density and movements.

8 "Measuring abundance of mule deer in the western United States is logistically difficult, hazardous and very expensive. For mountain lions, it is even worse," Stoner said. "In contrast, measuring changes in vegetation is relatively easy and more affordable. With this research, we have provided a model which wildlife managers can use in order to estimate the density of deer and mountain lions, two big game species of great economic importance," he explained.

9 The Taimyr reindeer herd in the northernmost region of Russia is the largest wild reindeer herd in the world and a key source of food for the local population of the Taimyr Peninsula. "Reindeer populations are declining all over the world, catastrophically in some places; in Taimyr, there has been about forty-percent drop since 2000, and the herd is now around 600,000 animals," said Andrey Petrov, an associate professor at the University of Northern Iowa, in Cedar Falls.

10 Petrov examined historical data going back to 1969 and determined that there have been ongoing changes in the distribution, displacement, and migration patterns of the wild reindeer due to climate change and human pressure. The reindeer have moved east, away from harmful human activity. At the same time, the herd is now traveling farther north and higher in elevation during hot summers.

11 "The work discussed at today's press conference is representative of the many ways in which satellite remote sensing supports our efforts at natural resource management and wildlife conservation, yet will there be any other kind of support to preserve wildlife?" asked Woody Turner, a scientist for NASA's Biological Diversity Program at NASA Headquarters in Washington.

Questions

A. Answer each of the following questions in 1- 4 complete sentences using your own words.
1. Based on Paragraph 2, identify two findings that satellite data offered. **(01)**
2. In reference to Paragraphs 3 and 7, what two sources of information did the researchers use? State the role of each. **(01)**
3. Based on Paragraphs 4 and 5, what concern do Laidre and Regehr have in common? Explain. **(01)**
4. Based on the last two paragraphs, deduce two steps that should be taken to help preserve endangered species. **(01)**

B. Answer the following questions in complete sentences.
1. What is the function of Paragraph 6? Explain your answer. **(01)**
2. What is the pattern of organization of Paragraph 8? Justify your answer. **(01)**
3. Identify two types of audience, other than the general reader, that might be interested in reading the selection above. What interest does each type find in it? **(01)**

C. The table below shows the species that face the threat of extinction, as assessed by the *International Union for Conservation of Nature*. **Read the table carefully, and then answer the question that follows.** **(01)**

Species Under Threat of Extinction						
Species	Amphibians	Birds	Freshwater Fish	Mammals	Plants	Reptiles
Threat Percentage	30%	12%	37%	21%	70%	28%

What can you conclude from the table? Explain your answer in 4 to 5 complete sentences, using evidence.

D. Each of the following extracts (A and B) is the correct part that completes ONE paragraph in the selection. Read them carefully, and then **choose from Paragraphs 2→10 the one that correctly fits with each extract.** **(01)**

Extract A: *As a result of his research, he found that there is a very strong relationship between plant productivity and deer and mountain lion density.*

Extract B: *One reason for this is to avoid increasing temperatures and more abundant mosquitoes.*

E. Refer to Paragraphs 1, 3 and 6 to find words that can best replace the words underlined in the sentences below. **(02)**
1. Some ecologists believe that <u>moving</u> herds from their territories has a negative impact.
2. From his <u>strategic</u> position, the scientist could see all the borders of the land.
3. The findings have a <u>great</u> impact on how people should preserve the life of endangered animals.
4. Farmed fish are <u>vulnerable</u> to different diseases, so the farmers need the government's help.

F. What does each of the following pronouns, bold-typed in the selection, refer to? **(01)**
1. **we** (Paragraph 3)   2. **this** (Paragraph 4)

Part Two: Writing   (Choose ONE of the two prompts below.) **(Score: 08/20)**

Prompt A: *To sustain the beauty and value of nature, all living things should be well-preserved.* **Write a persuasive essay of 250-300 words in which you show how vital it is to preserve nature and protect its living things.**

Prompt B: *The climate has become hotter than usual. Minor temperature changes cause the death of crops, decrease the amount of food, result in floods, and lead to imbalanced wildlife.* **Write an expository essay of 250-300 words in which you discuss two to three reasons behind the current critical situation of the environment, and then provide some effective actions humans should take in order to save our planet.**

[Content and organization of ideas (3.5), language and style (3.5), tidiness and legible handwriting (01)]

مسابقة في مادة اللغة الإنكليزية
المدة: ساعتان و نصف

What Satellites Can Tell about Animals

Q	Answer	Score
I-A-1	First, the data/findings informed scientists that there will be a decline in polar bear population in the coming years. Second, they (data/findings) showed that the herbivores and their predators in North America are in danger. Third, they (data/findings) provided a new perspective about the population of reindeer in Russia and the effects reindeer have on their surroundings. **(two are enough; 0.5 for each)**	01
I-A-2	First, the researchers used climate models in order to study the relation between the loss of Arctic sea ice and the population of animals living there. Second, they used imagery of plant productivity to figure out the numbers of mule deer and mountain lions living in different regions. Or: They used radio-telemetry (Moderate Resolution Imaging Spectroradiometer) to measure the density and movement of animals. **(two are enough; 0.5 for each)**	01
I-A-3	Both are concerned about the declining population of polar bears. Laidre explains that although polar bears live and reproduce well in certain regions, their population is directly influenced by the loss of sea ice in other places. As for Regehr, the population of animals such as polar bears will decline because their survival is directly related to the existence of their habitats. **(0.5 for the common concern and 0.5 for the explanation)**	01
I-A-4	First, data have shown that since 1969, human activities have resulted in displacing wild reindeer from their main habitats. Thus, humans should stop any harmful activity that might endanger these species. In addition, there is an indirect call/request by Turner to policymakers/government officials to support the researchers in their mission. As a result, they (policymakers/government officials) have to take urgent decisions concerning climate change in an attempt to protect wildlife. **(0.5 for each)**	01
I-B-1	Paragraph 6 is a transitional paragraph. Paragraphs 3 through 5 provide details about polar bears, their population and habitats. Paragraph 6 introduces two other animals, wild reindeer and mountain lions, that are endangered because of the climate change. Paragraphs 7 through 10 provide details and facts about wild reindeer and mountain lions. **(0.5 for the function and 0.5 for the explanation)**	01

I-B-2	The pattern of organization is problem-solution. The first two sentences state that it is very difficult and expensive to measure the abundance of both mule deer and mountain lions. The last sentence provides the solution that the scientists provided/found which is using a model that helped them estimate the density of both animals. **(0.5 for the pattern and 0.5 for the justification)**	**01**
I-B-3	First, ecologists/environmentalists (or students of ecology) might be interested in reading the selection because it updates them with the latest ways/methods used to trace and study the effects of climate change on certain species in different regions of the world. Second, organizations/groups that work in the field of preserving or protecting the environment might be interested since they will get information on the latest findings about endangered species, as a result of the climate change. **(0.5 for each type with its explanation; any other logical answer is accepted)**	**01**
I-C	The table provides percentages/statistics related to some species assessed as endangered/threatened by extinction. The statistics or percentages show that 70% of the plants are threatened. Second comes freshwater fish with 37%. Third, amphibians and reptiles have close percentages, 30% and 28% respectively. As for mammals and birds, their percentages are 21% and 12% respectively. Thus, plants are the most endangered species assessed, while birds are the least threatened. **(0.25 for the introductory sentence, 0.5 for the explanation/analysis, and 0.25 for the concluding sentence)**	**01**
I-D	**Extract A** is the part which completes Paragraph 8. **Extract B** is the part which completes Paragraph 10. **(0.5 for each)**	**01**
I-E-1	displacing	**0.5**
I-E-2	vantage	**0.5**
I-E-3	profound	**0.5**
I-E-4	prone	**0.5**
I-F-1	"**we**" refers to Kristin Laidre and her colleagues (other researchers/ scientists)	**0.5**
I-F-2	"**this**" refers to the idea that polar bears are healthy, fat and reproductive	**0.5**
II-A	Content and organization	**3.5**
II-B	Language and style	**3.5**
II-C	Tidiness and handwriting	**01**