

Time: 2 periods

Grade: 12/Life Science

English Language Exam

Part one: Reading

score: 11/20

Read the article below in which the writer sheds light on the nature of Mars Soil. When you are through with the reading answer the questions that follow.

Experiments find that Mars soil is Plant-friendly

By Kenneth Chang

- 1- Stick an asparagus plant in a pot full of Martian soil, and the asparagus might grow happily, scientists announced.
- 2- An experiment on the Phoenix Mars lander showed the dirt on the planet's northern arctic plains to be alkaline, though not fiercely so, and full of the mineral nutrients that a plant would need.
- 3- "We basically have found what appears to be the requirements, the nutrients, to support life whether past, present or future," said Samuel Kounaves of Tufts University, who is leading the chemical analysis, during a tele news conference on Thursday. "The sort of soil you have there is the type of soil you'd probably have in your backyard."
- 4- Mars today is cold and dry, and the surface is bombarded by ultraviolet radiation, making life unlikely, but conditions could have made the planet more habitable in the past. Plants that like alkaline soil – like asparagus – might readily grow in the Martian soil, provided that other components of an Earth-like environment including air and water were also present.
- 5- The preliminary findings from Phoenix do not answer whether life ever existed on Mars (or might still exist somewhere underground), only that conditions, at least at this location, are not the harshest imaginable. The soil, taken close to the surface, was similar to what is found in parts of Antarctica, Kounaves said. The soil elsewhere on the planet could well be very different; even the soil farther down in the ground could turn out to be acidic or otherwise vary in composition.
- 6- The Phoenix is capable of performing the same chemical analysis on three more samples.
- 7- In a different experiment, a tiny oven heated another sample of the Martian soil to about 980 degrees Celsius, or 1,800 degrees Fahrenheit, which released water vapor.
- 8- "This soil clearly has interacted with water in the past," said William Boynton of the University of Arizona, the lead scientist in the experiment.

- 9- Boynton said he could not say when the liquid water was present or even where it was. The moisture might have come from dust particles that had blown there from other parts of Mars.
- 10- The oven experiment also found carbon dioxide vapors, not surprising because the planet's thin atmosphere is primarily carbon dioxide.
- 11- The Phoenix mission is not directly looking for life on Mars, but rather whether conditions for habitability ever existed. In the wet chemistry experiment, water was mixed into the soil to produce Martian mud. Then the apparatus performed the same sorts of tests that gardeners use to test their soil.
- 12- "There's nothing about it that would preclude life," Kounaves said. "In fact, it seems very friendly."

The Global Edition of the New York Times

- A) Answer the following set of questions using your own words.
- 1- What scientific truth do scientists declare to affirm the fertility of Mars soil? (0.75 pt)
 - 2- Describe the nature of some areas of Mars. (0.75 pt)
 - 3- What results did scientists come up with in their experiments? (0.75 pt)
 - 4- What possibility do scientists believe with respect to environment on Mars? (0.75 pt)
- B) 1-Skim paragraphs 1+2 to pick up two kinds of figures of speech and identify them. (0.75 pt)
- 2-State the writer's mood in paragraph 12. (0.75 pt)
 - 3-What type of introduction does the writer use in paragraph 1 to clarify his idea? (0.5 pt)
- C) 1-Locate the thesis statement and phrase it. (1 pt)
- 2-What is the thematic organization of paragraph 5? Show how. (1 pt)
- D) Based on the information presented in paragraphs 7→11 fill in the chart below. Copy it on your booklet. (1.5 pt)

		Details
Paragraph	Sample 1	
Paragraph	Sample 2	
Paragraph	Sample 3	

- E) Summarize paragraph 11. (0.5 pt)

- F) The following statements misinterpret the information presented in the text. Correct them.
- a- Asparagus can never grow but in the backyard.
 - b- Plants need alkaline to grow.
 - c- Phoenix's findings made sure that life existed and still exist on Mars.
 - d- Mars soil is fierce.
- G) What do the following pronouns refer to? (1 pt)
- a- Which/ paragraph 7
 - b- It/ paragraph 9
 - c- Their/ paragraph 11
 - d- It/ paragraph 12

Part Two: writing

score: 9/20

Assume that people on Earth decided to inhabit Mars. What things should they carry with them to live there? What new customs should they adopt to live peacefully and what views should they have to design a better environment unlike the one they damaged on Earth? Discuss your topic in a three-body paragraph essay supported with logical reasons...

Draft, revise, and proofread your essay before you hand it in. Your writing will be assessed as follows;

5 for content and organization;

3 for language and style and

1 for tidiness and legibility

Good Work

Answer Key

- A) 1-To affirm the fertility of Mars soil, scientists declared a scientific truth that some plants may grow in it.

2-The nature of some areas on Mars can be described as dirty with alkaline in the northern arctic plains but is also full of nutrients needed for plant's survival.

3-With their experiments, scientists came up with the following result: Mars soil is a typical soil that we may have on Earth.

4-With respect to environment on Mars, scientists believed of the possibility of the existence of some conditions that made habitable in the past.

- B) 1-Paragraph 1: Personification: "Asparagus might grow happily."
Paragraph 2: Metaphor:"..alkaline though not fiercely..."

2-The writer's mood in Paragraph 2 is a relaxing one. He views the planet's soil as a friendly and promising one for supporting life.

3-To clarify his idea, the writer uses an illustrative introduction giving asparagus as an example to start and clarify his idea on the possibility of growing plants on a planet other than the Earth.

- C) 1-The thesis statement stands as is in paragraph 2 since it holds the controlling idea of the text. Tests on Mars soil were done by a space shuttle to study the nature there and match it with substances and nutrients that help plants grow.

2-Paragraph 5 follows the compare-contrast organization since holds contradictions about the issue of life on one side and reveals common characteristics of the soils on both Mars and Antarctica.

D)

		Details
Paragraph 7	Sample1	Heating Martian soil to release water vapor.
Paragraph 10	Sample 2	Finding carbon dioxide vapor.
Paragraph 11	Sample 3	Producing Martian mud.

- E) Kenneth Chang in his article draws the reader's attention to the fact that the aim of Phoenix mission is to check if conditions for habitability existed before. As a result, a similar test to that of the gardeners was done to study the soil.

- F) a-it may grow on Mars
b-alkaline and mineral nutrients
c-could not make sure
d-is friendly

- G) a-degrees

b-liquid water
c-gardeners
d-Martian soil