

Part A

CCT Weekly Practice English

Read the given text and answer the questions that follow:

Life on Mars

A new study published in the journal Science shows definitive evidence of organic matter on the surface of Mars. The data was collected by NASA's nuclear-powered rover 'Curiosity'. It confirms earlier findings that the Red Planet once contained carbon-based compounds. These compounds – also called organic molecules – are essential ingredients for life as scientists understand it.

The organic molecules were found in Mars's Gale Crater, a large area that may have been a watery lake over three billion years ago. The rover encountered traces of the molecule in rocks extracted from the area. The rocks also contain sulfur, which scientists speculate helped preserve the organics even when the rocks were exposed to the harsh radiation on the surface of the planet.

Scientists are quick to state that the presence of these organic molecules is not sufficient evidence for ancient life on Mars, as the molecules could have been formed by non-living processes. But it's still one of the most astonishing discoveries, which could lead to future revelations. Especially when one considers the other startling find that Curiosity uncovered around five years ago.

The rover analyses the air around it periodically, and in 2014 it found the air contained another of the most basic organic molecules and a key ingredient of natural gas: methane. One of the characteristics of methane is that it only survives a few hundred years. This means that something, somewhere on Mars, is replenishing the supply. According to NASA, Mars emits thousands of tons of methane at a time. The level of methane rises and falls at seasonal intervals in the year, almost as if the planet is breathing it.

NASA suspects the methane comes from deep under the surface of the planet. The variations in temperature on the surface of Mars cause the molecule to flow upwards at higher or lower levels. For example, in the Martian winter the gas could get trapped in underground icy crystals. These crystals, called clathrates, melt in the summer and release the gas. However, the source of the methane is still a complete mystery.

The world of astrobiology considers both of these studies as historical milestones. According to this information, Mars is not a dead planet. On the contrary, it is quite active and may be changing and becoming more habitable.

Of course, this means further research is necessary. Scientists say they need to send new equipment to Mars, equipment that can measure the air and soil with more precision. There are already missions underway. The European Space Agency's ExoMars ship lands in 2020 and will be able to drill into the ground on Mars to analyse what it finds. Additionally, NASA is sending another Mars rover in the same year to collect samples of Martian soil and return them to Earth.

The possibility of life on Mars has fascinated humans for generations. It has been the subject of endless science-fiction novels and films. Are we alone in the universe or have there been other life forms within our Solar System? If the current missions to the Red Planet continue, it looks as if we may discover the answer very soon.

Source: <https://learnenglish.britishcouncil.org/sites/podcasts/files/LearnEnglish-Reading-C1-Life-on-Mars.pdf>

Question 1

<i>Mars has fascinated humans for generations.</i> State whether the facts given below hold CORRECT or INCORRECT , to support the above statement.	CORRECT	INCORRECT
a. Presence of the essential life components like organic compound.		
b. Water sample collected by the scientific vehicle contained very small elements of an organic molecule.		
c. Existence of atmosphere with varied composition of gases.		
d. Presence of life supportive natural molecules like Methane.		
e. Mars can be said to have seasonal variations.		

Question 2:- The gas being trapped by the ice crystals and released later on results in causing _____

- a. change in the nature of composition of rocks.
- b. change in the composition of atmospheric components.
- c. variations in the temperature of the red planet.
- d. variation in the topography.

Question 3:- Select the option that correctly fills in the blank giving the apt explanation of the sentence

Mars is not a dead planet.

The above statement implies that.....

- a. Mars is evolving and one can't deny the existence of life forms on it.
- b. Mars is becoming prone to physical changes.
- c. Mars is becoming the favourite destination of the researchers.
- d. Mars is going to be livable soon.

Question 4:- Match the given words with their meanings

A speculate	I exactness
B revelation	II livable
C fascinated	III disclosure
D habitable	IV guess
E precision	V spell bound

- a. A- II, B-IV, C-V, D-I, E-III
- b. A- IV, B-III, C-V, D-II, E-I
- c. A- III, B-I, C-II, D-V, E-IV
- d. A- IV, B-V, C-III, D-I, E-II

Question 5:- After reading the above text, we understand that **ASTROBIOLOGY** deals with

- a. the origins, early evolution, distribution and future of life in the universe.
- b. long-term atmospheric patterns and their influences.
- c. the movements and relative positions of celestial bodies .
- d. the rocks, their composition and how they evolve over time..

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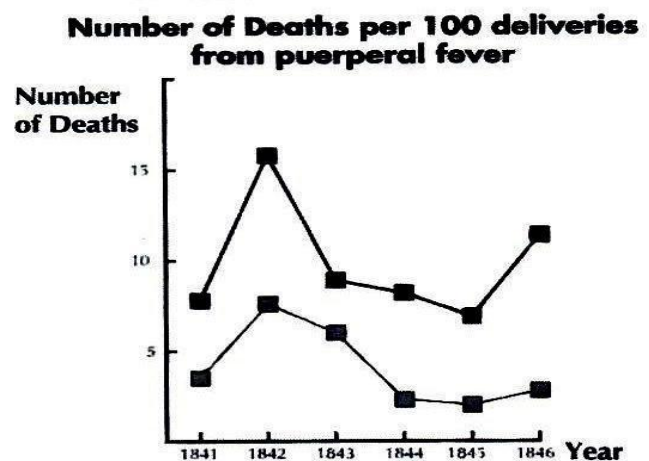
Part B

SEMMELWEIS DIARY

Semmelweis' Diary Text 1

'July 1846. Next week I will take up a position as "Herr Doktor" at the First Ward of the maternity clinic of the Vienna General Hospital. I was frightened when I heard about the percentage of patients who die in this clinic. This month not less than 36 of the 208 mothers died there, all from puerperal fever. Giving birth to a child is as dangerous as first-degree pneumonia.'

These line from the diary of Ignaz Semmelweis (1818-1865) illustrate the devastating effects of puerperal fever, a contagious disease that killed many women after childbirth. Semmelweis collected data about the number of deaths from puerperal fever in both the First and the Second Wards (see diagram).



Physicians, among them Semmelweis, were completely in the dark about the cause of puerperal fever. Semmelweis' diary again:

'December 1846. Why do so many women die from this fever after giving birth without any problems? For centuries science has told us that it is an invisible epidemic that kills mothers. Causes may be changes in the air or some extraterrestrial influence or a movement of the earth itself, an earthquake.'

Nowadays not many people would consider extraterrestrial influence or an earthquake as possible causes of fever. We now know it has to do with hygienic conditions. But in the time Semmelweis lived, many people, even scientists, did! However, Semmelweis knew that it was unlikely that fever could be caused by extraterrestrial influence or an earthquake. He pointed at the data he collected (see diagram) and used this to try to persuade his colleagues.

Question 1: Suppose you were Semmelweis. Give a reason (based on the data Semmelweis collected) why puerperal fever is unlikely to be caused by earthquakes.

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Semmelweis' Diary Text 2

Part of the research in the hospital was dissection. The body of a deceased person was cut open to find a cause of death. Semmelweis recorded that the students working on the First ward usually took part in dissections on women who died the previous day, before they examined women who had just given birth. They did not pay much attention to cleaning themselves after the dissections. Some were even proud of the fact that you could tell by their smell that they had been working in the mortuary, as this showed how industrious they were! One of Semmelweis' friends died after having cut himself during such a dissection. Dissection of this body showed he had the same symptoms as mothers who died from puerperal fever. This gave Semmelweis a new idea.

Question 2 : Semmelweis' new idea had to do with the high percentage of women dying in the maternity wards and the students' behavior.

What was this idea?

- A. Having students clean themselves after dissections should lead to a decrease of puerperal fever.
- B. Students should not take part in dissections because they may cut themselves.
- C. Students smell because they do not clean themselves after a dissection.
- D. Students want to show that they are industrious, which makes them careless when they examine the women.

Question 3: Semmelweis succeeded in his attempts to reduce the number of deaths due to puerperal fever. But puerperal fever even today remains a disease that is difficult to eliminate.

Fevers that are difficult to cure are still a problem in hospitals. Many routine measures serve to control this problem. Among those measures are washing sheets at high temperatures.

Explain why high temperature (while washing sheets) helps to reduce the risk that patients will contract a fever.

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Question 4: Many diseases may be cured by using antibiotics. However, the success of some antibiotics against puerperal fever has diminished in recent years.

What is the reason for this?

- A. Once produced, antibiotics gradually lose their activity.
- B. Bacteria become resistant to antibiotics.
- C. These antibiotics only help against puerperal fever, but not against other diseases.
- D. The need for these antibiotics has been reduced because public health conditions have improved considerably in recent years.

Part A

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ANSWER KEY

Life on Mars

1. a - correct
b - incorrect
c - incorrect
d - correct
e - correct
2. c. variations in the temperature of the red planet.
3. a. Mars is evolving and one can't deny the existence of life forms on it.
4. b. A- IV, B-III, C-V, D-II, E-I
5. a. science that studies the origins, early evolution, distribution and future of life in the universe.

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The solution for Part B is explained in Video Solution.