

#### A. Read the text below and respond to tasks A1 and A2.

Scientists have proposed a new way of looking out for marks of aliens in the universe. And it could help us see life forms we'd completely miss otherwise.

Space agencies including Nasa have been active in launching new tools to study the universe, such as the James Webb Telescope. That will provide information on the atmospheric makeup of planets far away – but we might not be sure how to use that information.

Until now, scientists have mostly been looking for oxygen in the atmosphere. If that's found, then it's likely that there's the chance for life on that planet, since we know from life on Earth that oxygen is key.

But we might be missing other important markers (also known as biosignatures) that could indicate such worlds are supporting life. As such, planets might have life on them that we wouldn't spot using just oxygen.

"This idea of looking for atmospheric oxygen as a biosignature has been around for a long time. And it's a good strategy – it's very hard to make much oxygen without life," said Joshua Krissansen-Totton, an author of the paper published in *Science Advances*. "But we don't want to put all our eggs in one basket. Even if life is common in the cosmos, we have no idea if it will be life that makes oxygen. The biochemistry of oxygen production is very complex and could be quite rare."

To do the research, the scientists looked at the history of life on Earth, and the kinds of gases that were around when life first appeared. They found that the planet had a complex mix of different gases, not only oxygen, and that looking for that cocktail could be a far more reliable marker of life on a planet.

"Our study shows that this combination would be a compelling sign of life. What's exciting is that it is also all doable and may lead to the historic discovery of an extraterrestrial biosphere in the not-toodistant future", said co-author David Catling, professor of Earth and Space Sciences.

> https://www.independent.co.uk (2018)

#### Α. ΚΑΤΑΝΟΗΣΗ ΓΡΑΠΤΟΥ ΛΟΓΟΥ

A1. Answer questions 1-3 based on information from the text (max. 30 words each).

 $(3 \times 4 \text{ points} = 12 \text{ points})$ 

(30 points)

- What would be a suitable title for this text? New Evidence Might Help Discover Alien Life or similar
- 2. What is the purpose of this text? To inform readers on the fact that some scientists propose looking out for a mix of gases rather than just oxygen in our search for extraterrestrial life. or similar
- According to the text, what makes it possible to discover extraterrestrial life forms in the future? The discovery that a complex mix of gases - and not solely oxygen - used to be in our planet's atmosphere when life first started. or similar

ΤΕΛΟΣ 2ΗΣ ΑΠΟ 5 ΣΕΛΙΔΕΣ

|  |   | ΑΡΧΗ 3ΗΣ ΣΕΛΙΔΑΣ   | S<br>S<br>S<br>S<br>S<br>S                                   |  |  |  |
|--|---|--|--|--|--|--|
| A2. Choose the correct answer (A, B or C) for items 4-9, based on information from the text. |   |  |  |  |  |  |
|  |   |  | (6 x 3 points = 18 points)                                   |  |  |  |
| 4.   | Information on the atmosphe   | ric makeup of distant planets  |  |  |  |  |
|  | <ul> <li>A. would become known if<br/>tools were launched into<br/>space.</li> </ul>                      | B. is currently not available scientists.  | <b>c.</b> is now systematically used in scientific studies.  |  |  |  |
| 5.   | Oxygen in a planet's atmosp   | here   |  |  |  |  |
|  | A. indicates that there is life on that planet.   | <b>B.</b> definitely proves that there is life on that planet.                     | C. does not relate to life on that planet.                   |  |  |  |
| 6.   | Considering oxygen to be an   | important marker for life is   |  |  |  |  |
|  | <b>A.</b> a fairly recent theory.   | <b>B.</b> an unfounded theory.   | C. not a new theory.   |  |  |  |
| 7.   | The phrase "But we don't wa<br>do not want to   | nt to put all our eggs in one bas  | sket" here means that scientists                             |  |  |  |
|  | A. limit their study of biosignatures to oxygen.  |  | <b>C.</b> include all gases in their study of biosignatures. |  |  |  |
| 8.   | According to the study prese<br>be the presence of<br><b>A.</b> a cocktail of gases,<br>excluding oxygen. | nted in the text, the most reliabl<br>B. a cocktail of gases,<br>including oxygen. | le life marker on a planet would C. oxygen alone.            |  |  |  |
| 9.   | David Catling claims that the   | study he conducted with his tea  | am can   |  |  |  |
|  | A. result in findings of great importance.  | <b>B.</b> have immediate results.  | C. contribute to the formation of exciting theories.         |  |  |  |
|  |   | he for   | · · · · _  |  |  |  |
| B. ΓΛΩΣΣΙΚΗ ΕΠΙΓΝΩΣΗ (30 points)   |   |  |  |  |  |  |
| B1. l  | Jse the correct form of the   | following words (A-H), to co   | omplete the gaps (10-14) in the                              |  |  |  |
|  |   | ple. There are TWO words yo  |  |  |  |  |
|  |   |  | (5 x 2 points = 10 points)                                   |  |  |  |

| Α. | retrieve | В. | create | C. | <del>joy</del> (example) | D. | painless |
|----|----------|----|--------|----|--------------------------|----|----------|
| Ε. | seem     | F. | avoid  | G. | demand                   | Н. | hinder   |

The example is in **bold** and *italics*.

Daydreaming is one of life's great (ex.) joys. You can indulge in it when you're stuck in a boring meeting or a long queue. This (10) <u>seemingly</u> harmless pastime, however, is a double-edged sword. Some research has found that it boosts (11) <u>creativity</u> but other studies suggest that it is bad for your mental health and could lower your intelligence.

On the positive side, in a psychology experiment, students performed better after a break which involved completing simple tasks, known to promote daydreaming, than after a break filled with **(12)** <u>demanding</u> tasks known to reduce daydreaming.

# ΤΕΛΟΣ 3ΗΣ ΑΠΟ 5 ΣΕΛΙΔΕΣ

One of the downsides to daydreaming is that it can be a **(13)** <u>hindrance</u> to learning. If the daydreamer's attention is diverted away from words on the page and directed to the content of the daydream, information **(14)** <u>retrieval</u> can be seriously affected.

B2. Fill in the gaps with <u>two words</u> in the statements of column B, so that they are similar in meaning to the statements (15-19) of column A, as in the example.

 $(5 \times 2 \text{ points} = 10 \text{ points})$ 

| <b>Example:</b> He must take his medicine now. |  | It is essential that he should take his medicine now.  |  |
|--|--|--|--|
|  | COLUMN A   |  |  |
| 15.  | It is believed that the latest educational reform has resulted in more creative classes. | The latest educational reform is believed<br>to have resulted in more creative<br>classes.       |  |
| 16.  | The phone rang just as I entered the room.   | Hardly / Scarcely had I entered the room when the phone rang.                                    |  |
| 17.  | They will need two days to fix the car.  | It <u>will take</u> them two days to fix the car.  |  |
| 18.  | The accident was caused by drinking-and-<br>driving.                                     | Drinking-and-driving <u>resulted in</u> / <u>led to</u> the accident.                            |  |
| 19.  | The manager should think about experience when hiring new staff.                         | The manager should take experience <u>into</u><br>account / consideration when hiring new staff. |  |

B3. Choose the best option A-F (Column B-headings) for items 20-24 (Column A-paragraphs). There is ONE option you do not need. (5 x 2 points = 10 points)

Climate Change Affects Biodiversity

|     | COLUMN A   |    |  |  |  |  |
|-----|--|----|--|--|--|--|
| 20. | The link between climate change and biodiversity has long been   | Α. | Bleak prospects  |  |  |  |
| С   | established. Although throughout Earth's history the climate has<br>always changed, with ecosystems and species coming and<br>going, rapid climate change affects the ability of ecosystems<br>and species to adapt and so biodiversity loss increases.          |    | o<br>Itak  |  |  |  |
| 21. | From a human perspective, the rapid climate change and   | В. | Effects may not be   |  |  |  |
| D   | accelerating biodiversity loss jeopardize human security, as   |    | so dramatic, after   |  |  |  |
|     | there could be a major change in the food chain upon which we<br>depend, water sources may change, recede or disappear,<br>medicines and other resources we rely on may be harder to<br>obtain, as the plants they are derived from may disappear, and<br>so on. | m  | and the second |  |  |  |
|     | ΤΕΛΟΣ 4ΗΣ ΑΠΟ 5 ΣΕΛΙΔΕΣ  |    | N<br>N<br>N<br>N   |  |  |  |

| 22. | The UN's Global Biodiversity Outlook 3, in May 2010,  | С.  | The pace of                  |
|-----|---|-----|------------------------------|
| A   | summarized some concerns over climate change and<br>ecosystems: "The impact of climate change on biodiversity is<br>likely to become a progressively more significant threat in the<br>coming decades. A major issue is the loss of Arctic sea ice<br>while higher concentrations of carbon dioxide in the atmosphere<br>will lead to further ocean acidification". |     | climate change<br>matters    |
| 23. | "Moreover, current levels of climate change are already taking  | D.  | Effects on the               |
| E   | their toll on ecosystems. In addition to rising temperatures, more frequent extreme weather conditions and changing patterns of rainfall and drought also interfere with biodiversity".   |     | human species                |
| 24. | Some species may benefit from climate change (including, from   | E.  | Current effects of           |
| F   | a human perspective, an increase in diseases and pests, which<br>is not a welcome change, of course) but, in any case, the rapid<br>nature of the change suggests that most species will not find it<br>as beneficial, as most will not be able to adapt.   | 12  | changing weather<br>patterns |
|     |   | L T | 'Selective' survival         |

## Γ. ΠΑΡΑΓΩΓΗ ΓΡΑΠΤΟΥ ΛΟΓΟΥ

**TASK**: As far back as 1956, Ray Bradbury's novel *Fahrenheit* 451 presents a future American society where books are outlawed and burnt when found. This makes access to knowledge and information impossible.

(40 points)

As a reader of a student magazine discussing Bradbury's book, you decide to write an **article** (180-200 words) in which you:

- a) express your opinion on people's right to knowledge and information, providing two arguments to justify it
- **b)** describe **two ways** in which your life would be affected if you could no longer access paper books or electronic sources of information.

You do not need to provide a title.

Do not sign the article.

## ΤΕΛΟΣ ΜΗΝΥΜΑΤΟΣ

ΤΕΛΟΣ 5ΗΣ ΑΠΟ 5 ΣΕΛΙΔΕΣ

#### Sample answer

In his novel *Fahrenheit 451*, Badbury describes a world in which access to information of all kinds is forbidden, characterised by book burning. To my mind, this constitutes a nightmare, a real dystopia.

To begin with, access to information is vital to humans, due to the fact that they are thus offered the ability to develop mentally as individuals, form their own opinions, and gain insight from past mistakes. Thus, access to historical events, political affairs, and decisions which have affected, are currently influencing or are going to have an impact on citizens and their lives should be easily accessible, so that they can object to it if necessary.

Additionally, information is closely related to development. Being able to study previous theories, discoveries and inventions, scientists are able to gain insight into how our world functions. With the aid of previous knowledge, for instance, we have established the laws of Physics, found cures for diseases, and made our lives easier.

To conclude, access to information is vital not only to citizens of democratic nations, but humans, as it is crucial for our development both as individuals and as a society.

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