مسابقة في مادة اللغة الإنكليزية
المدة: ساعتان ونصف

الاسم:
الرقم:

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

The selection below explains the significance of biological intelligence in human life. Read it carefully, and then answer the questions that follow.

Biological Intelligence: Hidden Capacities

1 Biological intelligence is a new concept that is nearly four billion years old. How does your body develop and use knowledge? Biological intelligence teaches your body to teach itself. Just like you educate your brain, you can teach your body. Lots of people have heard about artificial intelligence. But why haven't you heard about biological intelligence? **That** is because most of biological intelligence is quiet and unconscious: you see your hair grow, but you do not see your body learn.

2 Immunity, for instance, is your ability to fight infection and cancer. Your ability to fight off infections like flu is not something you know about – unless you get sick. Taking cases like cancer, we probably form dozens of tiny tumors each and every day. However, we destroy almost all of them so effectively without even knowing **that**. Biological intelligence engages all of immunity's remarkable tasks. One of its basic tasks is to teach the body to correctly recognize cancers that have been missed and then make the immune system go after them.

3 However, biological intelligence is much more than destroying viruses and tumors. Biological intelligence is the basic ability that keeps you going. It teaches your body to do what it needs to do. It is so big and so important, which makes it useful to be compared with artificial intelligence – the ability to transform our lives and economy.

4 Biological intelligence engages all the conscious and unconscious knowledge of a human being. That immense field stretches from genetics to culture, society and psychology. Much of it is hardly understood. For instance, your mother's tender arm that holds you in a warm embrace and the little gestures that tell "you are loved" will prove hard work for robots.

5 That is why it is the intelligence connected to everything inside you – every system you use. You have an immune system, a cardiovascular system, a hormonal system, a muscular system, and dozens of interconnected systems. Unlike most robots, the body does not do one thing at a time; it coordinates all the different information systems at the same moment. The size of your body's information systems dwarfs the complexity of the entire Internet. The actions that biological intelligence engages every moment to keep us healthy are far more effective than the medical attempts to protect us from illnesses.

6 In addition, biological intelligence has different goals from those of artificial intelligence. In our case, it is the survival of human species. For example, diabetes genes may keep us stay alive during famines; otherwise, we may really lose our life. Biological intelligence wants all living species to survive – not just us.

7 Unlike the artificial intelligence you experience in malfunctioned software, biological intelligence has survived almost everything thrown at it. It survived the asteroids that wiped out the dinosaurs. It survived volcanoes that scorched the earth for millions of years. It survived plagues and epidemics; many species have disappeared, but life has continued.

8 In fact, biological intelligence is built to cope with unexpected occurrences. We are built to survive comets, earthquakes, calamities and catastrophes that we have never seen – and that may never happen. Our genes and physiology are built to survive stresses that do not yet exist and may never exist. When AIDS first hit, it was terrifying, yet many of us had inbuilt systems to keep **it** off, even before one effective drug was produced.

9 Unlike artificial intelligence, biological intelligence does not operate just within us, but over a huge ecosystem. There are at least 40 trillion bacteria in your digestive tract. **They** not only digest food but also appear to change your mood, your ability to fight off infections, and the way cancer drugs work. At least, there are 10 times more non-human cells in your body than human ones.

10 Thus, biological intelligence is big, and it does amazing things. Because we have not thought of the body as intelligent and constantly learning, we do not even know what many of those capacities are. That is the power of a system built on chance, a system developed through billions of years of failures and triumphs. The robots are advancing, at work and play. Artificial intelligence is getting smarter every day. So should you.

Questions

A. Answer each of the following questions in 2- 4 sentences in your own words.

1. Based on Paragraph 2, identify two roles played by biological intelligence. **(01)**
2. Based on Paragraph 5, in what two ways does biological intelligence perform better than technology? **(01)**
3. Based on Paragraphs 7 and 8, in what sense is biological intelligence effective during hardships? Explain. **(01)**
4. What can be deduced from the comparison the writer draws in Paragraph 10? **(01)**

B. Answer the following questions in complete sentences.

1. Identify the paradox in Paragraph 1 and explain it. **(01)**
2. Identify the cohesive device used to link each pair of paragraphs below and specify its type. **(01)**
   a. Paragraphs 5 and 6 b. Paragraphs 7 and 8
3. What two types of evidence does the writer use to achieve credibility? Provide examples. **(01)**

C. The table below compares between the attributes of natural and artificial intelligences. Read the table carefully, and then **answer the question that follows in 3-4 sentences.** **(02)**

A Comparison between Natural and Artificial Intelligences		
Attributes	**Natural Intelligence (Human)**	**Artificial Intelligence (Machine)**
Using senses (eyes, ears, touch, smell, taste)	*High*	*Low*
Being innovative and imaginative	*High*	*Low*
Making complex calculations	*Low*	*High*
Transferring information	*Low*	*High*
Using a variety of information sources	*High*	*High*

What conclusion can you draw from the comparison above?

D. Each of the following extracts (A and B) is the correct ending of ONE paragraph in the selection. **(01)** Read them carefully, and then choose from Paragraphs 1 to 10 the one that fits with each extract.

Extract A: Consequently, it triggers the immune system to track the sick cells.

Extract B: Whatever the cells are, biological intelligence rules them all.

E. Scan Paragraphs 7, 8, and 10 to find words that best replace the words/ phrases underlined in the following sentences. **(01)**

1. The <u>defective</u> machine urged the scientists to use another device.
2. The surrounding area was <u>burnt</u> due to an explosion in a huge laboratory.
3. If the medicine is not effective, the patient will not <u>stay alive</u> till the end of the year.
4. His <u>success</u> in the field of artificial intelligence led to significant advances in robotics.

F. What does each of the following pronouns, **bold-typed** in the selection, refer to? **(01)**

1. **That** (Paragraph 1) 2. **that** (Paragraph 2) 3. **it** (Paragraph 8) 4. **They** (Paragraph 9)

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

Prompt A: *Artificial intelligence (robotics, automation, virtual reality, etc.) is getting smarter every day.* **In a well-organized expository essay of 250-300 words, develop the statement above, shedding light on two positive and/or negative effects of artificial intelligence in any field(s) of your choice (educational, social, industrial, etc.).**

Prompt B: *Many scientists believe that artificial intelligence will continue to develop to an extent we, human beings, turn* to be *slaves to it.* **In a well-organized argumentative essay of 250-300 words, argue for or against this point of view.** Make sure that your essay <u>supports your position</u> and <u>refutes the opposite point of view</u>.

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

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دائرة الامتحانات الرسميَة

أسس التصحيح | مسابقة في مادة اللغة الإنكليزية

المدة: ساعتان ونصف

Biological Intelligence: Hidden Capacities

Q	Answer	Score
I-A-1	First, biological intelligence deals with all important functions of the immune system. Second, it teaches the human body how to identify diseases accurately. Third, it gets the immune system attack infections. **(Two roles are enough; 0.5 for each role)**	**01**
I-A-2	First, while biological intelligence connects the various systems in our body, technological devices fail to engage more than one task a time (or: biological intelligence collects data from different sources and organizes them at the same moment). Moreover, the amount of information collected by biological intelligence is much more than that of the Internet. In addition, biological intelligence is more active in keeping the human body healthy. **(two reasons are enough; 0.5 for each)**	**01**
I-A-3	Biological intelligence is responsible for helping species survive disasters and hardships. Under the control and guidance of biological intelligence, human genes and physiology help and adapt the body to deal with sudden catastrophic/fatal changes such as asteroids, volcanoes, epidemics, earthquakes, and AIDS.	**01**
I-A-4	The writer mentions that biological intelligence is amazing and great, yet artificial intelligence has become smarter. According to him/her, this comparison shows that people are not fully aware of the great capacities of biological intelligence, so they should benefit from such capacities to become smarter humans.	**01**
I-B-1	The paradox is in the first sentence of Paragraph 1: Biological intelligence is considered a "new" concept although it is very old; logically, something which is four billion years should be old, not new. **(0.5 for identification and 0.5 for explanation)**	**01**
I-B-2-a	Paragraphs 5 and 6 are linked with the **transition signal "In addition"** which is **a direct cohesive device.** **Or:** They are linked with the **repetition of the key terms** such as "biological intelligence"; it is **an indirect cohesive device**. **(0.25 for the device and 0.25 for its type)**	**0.5**
I-B-2-b	Paragraphs 7 and 8 are linked with the **repetition of the key terms** such as "survive" and "biological intelligence"; it is **an indirect cohesive**	**0.5**

	device. **(0.25 for the device and 0.25 for its type)**	
I-B-3	First, the writer uses specific names of diseases and biological systems such as in Paragraphs 2, 5 and 8: "cancer", "cardiovascular system", "hormonal system", and "AIDS". Second, he uses numbers such as in Paragraphs 1 and 9: "four billion", "40 trillion" and "10 times more". Third, he refers to facts or real events such as in Paragraphs 7 and 9: the extinction of dinosaurs and the number of bacteria found in the digestive tract. **(two types are enough; 0.5 for each one with its examples)**	**01**
I-C	The table reveals the comparison (similarities and differences) between natural and artificial intelligences **(0.5)**. Both kinds of intelligence have high attributes of using a variety of information sources **(0.5)**. However, natural intelligence exceeds artificial intelligence in two qualities: the ability of using senses and the ability of being innovative and imaginative **(0.5).** As for artificial intelligence, it excels in making complex calculations and transferring information **(0.5).** **Or:** The table reveals the comparison (similarities and differences) between natural and artificial intelligence **(0.5)**. Natural intelligence shows high performance in using senses, being innovative and imaginative, and using a variety of information sources **(0.5).** As for artificial intelligence, it reveals high performance in making complex calculations, transferring information, and using a variety of information sources **(0.5)**. Thus, both have a similarity in using information resources, yet they differ in the other four attributes presented **(0.5)**.	**02**
I-D	**Extract A** is the correct end of Paragraph 2. **Extract B** is the correct end of Paragraph 9. (**0.5 for each)**	**01**
I-E-1	malfunctioned	**0.25**
I-E-2	scorched	**0.25**
I-E-3	survive	**0.25**
I-E-4	triumph(s)	**0.25**
I-F-1	**"That"** refers to the idea of not hearing about biological intelligence	**0.25**
I-F-2	**"that"** refers to the act of destroying tumors	**0.25**
I-F-3	**"it"** refers to AIDS	**0.25**
I-F-4	**"They"** refers to 40 trillion bacteria; bacteria	**0.25**
II-A	Content and organization of ideas	**3.5**
II-B	Language and style	**3.5**
II-C	Tidiness and legible handwriting	**01**