INGLÊS 3

- Leia o texto abaixo para responder as questões seguintes:

Engineering Sustainability for Our Future

Current projections predict that the earth's human population will be around 9 billion in 2050. By the year 3000 the world's population is predicted to be double that of today's 6.6 billion. Most of this expected increase is predicted to be concentrated in the developing nations of Africa, Asia, and Latin America. Meeting the most basic needs of this future population means an ever-growing stress on our environment and limited natural resources.

This means increased production and consumption of goods and services and increased demand for land, energy, and materials (NRC, 1999). While the engineering achievements of the past century have increased the standard of living in developed countries, the challenge of the future is to alleviate poverty and raise the standard of living for all on this planet while also sustaining our natural resources.

As we consider the engineering achievements of the past, we also need to consider their unintended consequences on our lives and our planet. We must ask ourselves: What are the social, economic, and environmental impacts of our engineering achievements? Many engineering decisions cannot be made without consideration of nearby natural and manmade systems, because contemporary engineering systems can affect the environment far into the future. There is a strong need to reduce the risk and level of unwanted disturbances to natural resources and our man-made world associated with engineering systems.

According to the National Resource Council (NRC, 1999): "Sustainable development—the reconciliation of society's developmental goals with its environmental limits over the long term—is the most recent conceptual focus linking the collective aspirations of the world's peoples for peace, freedom, improved living conditions, and a healthy environment." Engineers have an obligation to meet the basic needs of all humans for water, nutrition, energy, sanitation, and health, as well as the protection of the planet's resources, including our cultural and natural diversity. It is their responsibility to find solutions for these kind of problems.

Questão 1. De que se trata o texto? Faça um resumo a respeito da ideia geral contida no texto acima.

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Questão 2. De acordo com o texto, qual é a obrigação dos engenheiros?

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_____

Questão 3. Escreva, em língua inglesa, a respeito da sua rotina diária. Utilize o Simple Present e forme, pelo menos, 3 (três) frases.

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Questão 4. Observe a frase em destaque: "It is their responsibility to find solutions for these kind of problems". É correto afirmar que:

a) a frase em destaque se encontra no Simple present.

b) a frase em destaque se encontra no Past Perfect.

c) a frase em destaque se encontra no Future tense.

d) a palavra "responsability" é um falso cognato.

Questão 5. Imagine que você está desenvolvendo um novo produto software, um jogo de esporte. Agora escreva, em língua inglesa, perguntas específicas para fazer a uma pessoa que testou o produto, mas que não tem um conhecimento técnico.

E.g: Did you find it easy to understand the instructions?

1. _____

2. _____

3. _____

Question 6: Answer the questions:

a) What is safety test? Is it mandatory or volunteer? Why do companies conduct this kind of test?

_____
_____

b) What is performance test? Is it mandatory or volunteer? Why do companies conduct this kind of test?

_____
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INGLÊS 4

Read the text to answer the questions:

Weak and Strong AI

Advanced systems such as voice assistants, autonomous vehicles and robots still have a long way to go to compete with the human brain. Intelligence is often defined as the ability to achieve goals in a wide range of environments. Today's AI (Artificial Intelligence) applications, however, always specialize in a given task. They solve problems based on rules established

specifically for that task. So although a chess program may be able to continually optimize its game strategy, it would not be capable of driving a car.

In contrast, human beings are able to use their intelligence in a variety of contexts. Certain characteristics of our brains are very difficult to simulate. The human brain is extremely flexible and can adapt intuitively to unpredictable environments.

Humans are creative, curious and endowed with social skills, all of which continues to set us apart from even the most intelligent computer. This is why experts in the field, unlike the marketing departments of many companies, make a distinction between weak (or narrow) and strong (or general) AI.

Today's AI technologies are all categorized as weak AI – which is not to diminish what technology has achieved. In many areas, weak AI has already surpassed the capabilities of human beings. Strong AI is differentiated by the ability to transfer knowledge and skills from one environment to another and to make decisions in a variety of contexts, even unfamiliar ones. By definition, strong AI is capable of acting on its own and adapting flexibly to many different problems. It is also able to interact proactively with other machines and with human beings. A virtual assistant with strong AI would be able to predict our needs without first receiving instructions.

An essential feature of strong AI is the ability to learn independently, which is familiar to us today mainly in the context of machine learning. Machine learning requires not only a sufficient amount of data and problems to solve, but also – and most importantly – specialized algorithms that can recognize relevant patterns within the data. These algorithms must be dynamic and capable of learning – in other words, they must be able to adapt continually to changing conditions. In addition, AI must have the ability to apply the correct algorithms to the given problem. These are, in a sense, precisely the things that the human brain learns throughout our lives. For us, it takes 18 years to reach an acceptable level of maturity, at least as defined by law. It is only by making appropriate use of self-optimizing algorithms capable of learning and interacting that computers can make predictions or decisions without being explicitly programmed to do so. AI requires not only powerful algorithms, but also the knowledge and experience – accumulated as data – to determine which one is optimal for solving the given problem. So far, however, researchers have not succeeded in developing strong AI with such self-optimizing capabilities. Advances in the field of machine learning are therefore essential for making the transition from weak to strong AI. Most scientists agree that this is possible.

Question 1: What is the text about? Write an overview about the main idea of this text.

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_____
_____

Question 2: According to the text, what is the difference between Weak AI and Strong AI?

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Question 3: What is the difference between Today's AI and Humans?

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Read the paragraph and answer the questions:

"Since the pioneering work of Frederic I. Parke in 1972, significant research efforts have been attempted to generate realistic facial modeling and animation. The most ambitious attempts perform the face modeling and rendering in real time. Because of the complexity of human facial anatomy and

our inherent sensitivity to facial appearance, there is no real time system that generates subtle facial expressions and emotions realistically on an avatar. Although some recent work produces realistic results with relatively fast performance, the process for generating facial animation entails extensive human intervention or tedious tuning. The ultimate goal for research in facial modeling and animation is a system that 1) creates realistic animation, 2) operates in real time, 3) is automated as much as possible, and 4) adapts easily to individual faces."

Question 4:

a) What is the text about? Why it is difficult to generate facial animation?

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b) What is the main goal for researchers who work in this field?

_____
_____

Question 5: Grammar question. Complete the sentences with Simple present, Past Perfect Tense or Future tense.

a) When I finish college, I _____ (work) at Moura's company.

b) When I got to UABJ, I discovered that the professor _____ (leave) the class earlier.

c) In the evening, I _____ (watch) Television with my mom.

d) When I opened the curtains, the sun was shining but the ground was wet. It _____ (rain) during the night.

e) I _____ (get up) at 6 o'clock.

Question 6: (Track 33) Listen to the audio and answer the questions:

a) The engineer believe that we should be encouraging more girls and young women to become engineers. He said that more diverse engineering community offers benefits for society in general. What did the engineer mean by that?

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_____
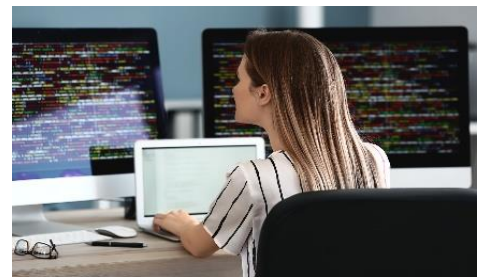
b) What are also the benefits from a business point of view?

_____
_____
_____
_____Good Luck! ☺