



"A matemática é o alfabeto com que Deus escreveu o mundo"
Galileu Galilei

Leia a passagem a seguir e resolva às questões 16 a 20

If you happened to 16 down London's Regent Street this 17 Christmas, you may have noticed, just above the festooned storefronts and package-laden shoppers, a series of clusters of glowing translucent globes. If you'd taken a 18 look, you would have realized that the globes were pulsating with color, the light emitting diodes (LEDs) within varying their hue and intensity according to the number of 19 the wind speed, and the amount of sunlight. And if you'd looked really close, you would have discovered the quad-core Xeon computers running customized software that took inputs from people-monitoring video cameras and environmental sensors to precisely 20 the display.

Escolha em cada questão, a alternativa que completa corretamente a lacuna correspondente, tornando o texto coeso e coerente.

▶ Questão 16

- A) stroll
- B) tiptoe
- C) crawl
- D) trek
- E) paddle

Resolução:

tiptoe – andar nas pontas dos pés.

crawl – rastejar

trek – caminhar com dificuldade

paddle - pedalar

Alternativa A

▶ Questão 17

- A) next
- B) past
- C) future
- D) following
- E) ago

Resolução:

next – próximo

future – futuro

following – seguinte

ago - atrás

Alternativa B

▶ Questão 18

- A) larger
- B) opener
- C) closer
- D) locally
- E) nearby

Resolução:

larger – maior

opener – abridor

locally – local

nearby - proximidade

Alternativa C

▶ Questão 19

- A) passersby
- B) passes
- C) passengers
- D) passings
- E) passwords

Resolução:

passes – passar
passengers – passageiros
passing – passar
password - senha

Alternativa A

▶ Questão 20

- A) choreograph
- B) listen
- C) dance
- D) rehearse
- E) sing

Resolução:

listen – ouvir
dance – dançar
rehearse – ensaiar
sing - cantar

Alternativa A

▶ Questão 21

Martin Hellman, professor emeritus at Stanford, used engineering risk analysis methods to determine the failure rate for the United States' nuclear deterrence strategy and came up with a shocking 1 percent chance per year that a nuclear war will break out.

What can be understood about this passage?

- A) According to the United States, a nuclear war is not likely to erupt.
- B) Engineering risk analysis methods are inefficient because they hardly determine failure rates.
- C) The USA develops strategies to avoid nuclear issues.
- D) There have been found failures concerning the risk analysis methods used by Professor Martin Hellman.
- E) According to the USA's nuclear deterrence strategy, 1 percent of the USA population is afraid of a nuclear war eruption.

Resolução:

O método de análise de riscos é uma das estratégias usadas pelos Estados Unidos para evitarem questões nucleares, no caso, uma guerra.

Alternativa C

▶ Questão 22

Chip makers replaced aluminum interconnects with better conducting copper ones about seven years ago, but now copper's days are numbered too.

What is the present condition of copper interconnects?

- A) They were substituted by aluminum ones.
- B) They will soon be replaced.
- C) They are numbered according to their conductivity.
- D) Their conductivity is as powerful as aluminum ones.
- E) They receive serial numbers.

Resolução:

No texto "Copper's days are numbered". O cobre está com os dias contados, isto é, ele logo será substituído.

Alternativa B

▶ Questão 23

Don McMillan likes to say that the only time people laugh at engineers is when they mess up at work. But he's the exception. He's a trained electrical engineer, and people laugh at him everyday – unless he messes up. That's because he tells jokes for a living.

What do we know about Don McMillan?

- A) He's a comedian.
- B) He messes up at work.
- C) People laugh at him because he messes up.
- D) He pretends he is a trained electrical engineer.
- E) He makes money as an electrical engineer.

Resolução:

No texto "Ele conta piadas para viver" significa que ele, além de engenheiro, é também comediante.

Alternativa A

▶ Questão 24

Designers use databases of North American and European body measurements to create their products but feel a lack of data to adapt the designs to Asians' different body measurements. That will soon change.

What is a basic assumption of designers?

- A) Databases of North American and European body measurements do well to all cultures.
 - B) Designers will soon change North American and Europeans.
 - C) Asians have the same body measurements as North Americans and Europeans.
 - D) The body measurements databases used by designers are not perfect but please all their costumers.
 - E) One size never fits all.
- a) Alternativa

Resolução:

Ao ler o texto percebemos que os padrões de medidas corporais americanos e europeus, que são diferentes entre si, não se encaixam aos padrões asiáticos, daí a conclusão: "Um tamanho único, ou medida padrão, não serve a todos".

Alternativa E

▶ Questão 25

Remember when Barbie whined that "math is hard". Maybe you got annoyed at hearing a popular female doll say that to little girls. Or maybe you also had a nagging suspicion that, in fact, boys are better at math. Well, the latest research is in, and the answer is a resounding no: and analysis of performance on math tests finds that girls match boys. The finding appears in the July 25 issue of the journal Science.

Which of the new information below could be coherently added to the passage?

- A) And no gender difference can be found among top performers either.
 - B) So, once more it's proven that male chromosomes are more efficient.
 - C) Therefore, the gender struggle is over: women have shown better performances than men.
 - D) But playing Barbie is a way of learning Math.
 - E) Playing with the doll is a good stimulus to female X chromosome.
- a) Alternativa

Resolução:

Fica bem claro pelo texto que homens e mulheres possuem capacidades iguais no que se refere à habilidade matemática, portanto a conclusão mais lógica seria letra A "Também não há diferença de capacidade entre os mais hábeis na matemática".

Alternativa A

▶ Questão 26

A legion of 38 solar-battered cars gathers in State Square in Darwin, on the northern coast of Australia. The flat, rectangular bodies hug the ground like three-wheeled UFOs, their etherealness accentuated by their motor's eerie, barely perceptible hum.

Three adjectives that can be used to describe the cars mentioned in this paragraph are

- A) green, not curving, spherical.
- B) UFO-like, secret, noisy.
- C) delicate, mysterious, silent.
- D) heavy, unusual, humming.
- E) stable, unique, polluting.

Resolução:

Delicate tem como sinônimo etherealness.

Mysterious é sinônimo de eerie.

Silent tem como sinônimo a expressão "barely perceptible hum".

Alternativa C

▶ Questão 27

The midday sun had chased the last of the morning's chill from the air when David Downey turned into the Garmin International parking lot, in Olathe, Kan., winding up a 20-kilometer run. He'd been out on the road for nearly 2 hours, a little longer than usual, but he wanted to enjoy the perfect fall weather while he could.

By the description of the situation presented in this paragraph, what do you know about the weather?

- A) It was quite hot at 12 o'clock.
- B) It was windy because it was autumn.
- C) The wind was blowing at 20 kilometers per hour.
- D) The bad weather had been delaying people's activities.
- E) The morning had been cold.

Resolução:

Na primeira linha do texto há a informação de que naquela manhã tivemos uma "morning's chill", ou seja, uma manhã gelada, abrandada pelo sol do meio dia.

Alternativa E

▶ Questão 28

As one of us – the heaviest one – approached the first major hill on a test ride of Brammo Motorsport's brand new Enerzia electric motorcycle, we were doubtful that this light, elegantly designed bike could haul a 109-kilogram (240-pound) rider up the incline. We shouldn't have worried: it effortlessly propelled him to the top of Portland, Ore.'s West Hills.

What is NOT true about the product mentioned in this paragraph?

- A) Very heavy people can ride and trust it.
- B) Brammo Motorsports' latest model is just out.
- C) It seems fragile.
- D) It weights 109 kilograms.
- E) It succeeds riding heavy people up hill.

Resolução:

○ que não se pode afirmar quanto ao produto é que ele pesa 109kg. Na realidade, ele suporta o peso 109kg ou 240 libras.

Alternativa E

Questão 29

Improving the diversity of biological habitats and ecosystems is a vital goal in itself, yet policies to encourage biodiversity, like most legislation, will have both supporters and naysayers.

By the information in this sentence, what do we know about biodiversity?

- A) Everybody agrees with it.
- B) Life depends on its objectives.
- C) The police will assure habitats and ecosystems goals.
- D) Most of the policemen encourage this legislation.
- E) Some people take a negative view of it.

a) Alternativa

Resolução:

Sobre a biodiversidade, sabemos que ela possui defensores (no texto, supporters) e críticos (no texto, naysayers, termo antigo que qualifica pessoas que negam alguma coisa).

Alternativa E

Questão 30

Fisheries may be an ancient economic activity, but nowadays they are at the forefront of globalization. For instance, when it comes to the trade itself: a blue hake caught off the coast of New Zealand by a Japanese vessel may be processed in China before flown to a market in London or Paris.

- A) Fisheries are an old and traditional economic activity.
- B) The world has become globalized due to fisheries.
- C) Blue hake fishing is an activity that unites New Zealand, Japan, China, England and France.
- D) Fisheries have enabled diverse economies to engage around a common activity.
- E) The demanding markets of London and Paris have made countries such as New Zealand, China and Japan unite the vessel manufacturing activity.

Resolução:

Dizer que os pescadores estão na vanguarda da globalização, de acordo com o texto, significa que economias tão diferentes quanto a Nova Zelândia, Japão, China, Inglaterra e França se unem em torno de uma atividade comum, cada uma com sua própria contribuição.

Alternativa D

Leia o texto e resolva as questões que o seguem.

E-NOSES

Adapted from IEEE Spectrum, 03.08

Several hundred years ago, village doctors in rural China diagnosed diabetes by the characteristically sweet smell of a patient's breath. Today hospitals use a battery of blood tests and laboratory analyses to make that same diagnosis, but doctors may soon be sniffing their patients' breath again. This time the doctors will have electronic noses small and cheap enough to carry in their pockets.

This e-nose will be the culmination of decades of work at countless laboratories, where researchers have sought to create a tiny, cheap, automatic sniffer that would let wine bottles monitor the aging of their contents, allow meat packages to flag spoilage, and enable mailboxes to check for bombs. Imagine barroom coasters that double as Breathalyzers, bumper stickers that monitor car emissions. Until now, been just so much sci-fi.

E-nose technology has quietly advanced during the past two decades. Commercial models equipped with sensor arrays came to market in the mid-1990s, and today they're used to distinguish wines, analyze food flavors, and sort lumber. Benchtop systems are also used in the pharmaceutical, food, cosmetics, and packaging industries, while smaller, portable units are used to monitor air quality. But these noses cost in the range of US \$5000 to \$ 100,000. A coming convergence between e-nose technology and advances in printed electronics will finally bring the price down – way down. Within a decade we'll see enoses that cost tens of dollars and appear in smart packaging for high-end items like pharmaceuticals or as part of intelligent or interactive appliances – picture a refrigerator that knows when milk has gone bad. Prices could easily drop to under a dollar by 2020.

The secret? Conducting polymers. Developers of both electronic noses and printed electronics are exploiting these materials, which can be sensitive to the chemicals that make up odors and are also capable of producing electrical signals. E-nose developers are concentrating on honing the sensing properties of conducting polymers, while the printed-electronics people are investigating ways of using these materials to fabricate ultralow-cost electronics. Combining the fruits of these two separate efforts will finally bring e-noses into our supermarkets, homes, and daily life.

O quadro abaixo apresenta um título apropriado para cada parágrafo do texto, conforme seu conteúdo. Observe o quadro e responda às questões de 31 a 35.

- A) The innovative material
- B) Personified inanimate objects
- C) Past-inspired sci-fi
- D) Already in the market
- E) Alluring technologies promise the product accessible in ten years

Atribua o título apropriado a cada parágrafo, de acordo com o quadro acima.

▶ Questão 31

Título para o primeiro parágrafo

Resolução:

O primeiro parágrafo traça um breve histórico de como era feito o diagnóstico da diabetes através do hálito das pessoas, daí o título "ficção científica com inspiração no passado".

Alternativa C

▶ Questão 32

Título para o segundo parágrafo

Resolução:

Neste parágrafo o autor cita descanso do copo que se transforma em bafômetro; adesivos de pára-choques que monitoram a toxicidade das emissões.

Alternativa B

▶ Questão 33

Título para o terceiro parágrafo.

Resolução:

No texto há a informação que, desde os anos 90, modelos comerciais equipados com sensores de odores usados para distinguir vinhos, analisar sabores de alimentos, para separar tipos de madeiras.

Alternativa D

▶ Questão 34

Título para o quarto parágrafo.

Resolução:

Neste parágrafo o autor nos informa que haverá em breve a convergência entre a tecnologia dos e-noses e os avanços na impressão eletrônica o que promoverá a queda dos preços em uma década.

Alternativa E

▶ Questão 35

Título para o quinto parágrafo.

Resolução:

No último parágrafo há a informação de que o novo material usado será um polímero condutor, ou seja, o material inovador.

Alternativa A

▶ Questão 36

In which of the following you are likely to find the text "E-NOSE"?

- A) a tourist brochure
- B) a safety leaflet
- C) a scientific journal
- D) a comic book
- E) a billboard

Resolução:

A característica do texto apresentado é científica, portanto passível de ser encontrado em um periódico científico.

Alternativa C

▶ Questão 37

Escolha a palavra ou expressão que apresenta um significado DIFERENTE do significado da palavra sublinhada em: "This e-nose will be the culmination of decades of work at countless laboratories..."

- A) highest point
- B) end
- C) apogee
- D) climax
- E) result

Resolução:

A expressão sublinhada "culmination" pode ser o ponto mais alto, o apogeu, o clímax ou o resultado exceto o fim.

Alternativa B

▶ Questão 38

De acordo com o conteúdo do texto "E-nose", qual das seguintes frases é provável ser encontrada no texto?

- A) E-noses are a nonsense and deserve no more research.
- B) E-noses will hardly be more than fantasy in people's mind.
- C) E-noses will soon be omnipresent in this century's societies.
- D) E-noses will remain unaffordable despite serious research is developed.
- E) E-noses are mere toys in the hands of imaginative scientists.

Resolução:

Pela conclusão presente no texto podemos concluir que em breve e-noses estarão presentes em todos os lugares desde bares até nossos lares, o que lhe dará uma característica onipresente.

Alternativa C

▶ Questão 39

Qual é o significado do seguinte fragmento retirado do texto "E-nose": "Imagine barroom coasters that double as Breathalyzers..."?

- A) There will be twice as much barroom coasters as Breathalyzers.
- B) Two different people will use the same barroom coaster.
- C) Breathalyzers will be replaced by barroom coasters.
- D) Every drink ordered will allow the customer the right to use a Breathalyzer.
- E) Barroom coasters will have one more function.

Resolução:

O significado do termo destacado é "imagine assentos para copos em bares que se dobram para transformar-se em bafômetros.

Alternativa E

▶ Questão 40

Qual dos títulos seguintes pode ser usado apropriadamente para substituir o título do texto "E-nose"?

- A) "ELECTRONIC NOSES SNIF SUCCESS"
- B) "SNEEZING NOSES"
- C) "INVENTED DIAGNOSIS"
- D) "HUMAN NOSES"
- E) "EXPENSIVE ODORS TURNED CHEAP"

Resolução:

Os outros títulos seriam:

Narizes espirrantes

Diagnóstico inventado

Narizes humanos

Odores caros se tornam baratos.

Alternativa A

EXPRESSÃO ESCRITA

Redija em inglês, no espaço apropriado do caderno de soluções e usando a sua imaginação, uma continuação coerente e coesa entre 15 e 25 palavras para cada texto a seguir.

▶ Questões 41 A 43

It's easy to get lost on the moon. Apollo astronauts sometimes failed to find features only a few meters from them. To help solve this problem, NASA is funding research on...

This is an era in which science is needed, arguably more than ever. In the environment, energy, and innovation, generally smart investors rely on smart thinkers. The public needs trusty scientists. The trouble is...

Research group across Europe are becoming parents to bouncing baby robots. By teaching them to walk, open doors, shake hands, and even talk, these scientists hope to...

Resolução:

Questões que testam a capacidade do aluno de compreender o assunto principal tratado no trecho e sua habilidade em continuar e encerrar o assunto.

Questões ótimas que vão avaliar não só o conhecimento de estrutura gramatical do aluno, bem como seu vocabulário, sua capacidade de expressão e seu conhecimento global do que ocorre no mundo das ciências.

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