**G R A M M A R**

**Read the following text and fill in each gap with the correct grammatical form of the verbs and pronouns provided in the brackets. Write your answers in the spaces below the article. The words and phrases in the brackets are arranged alphabetically—make sure you use all the words in the correct word order. Spelling counts!**

When you move from one side of the room to the other, how much do you analyse the action? For most people, the series of muscle movements that **1 … (allow, get around, they)** on a daily basis is automatic. But when babies **2 … (bear)**, their brains **3 … (form, not)** the neural connection with their walking muscles in order to stand and balance. Through trial and error, they **4 … (begin, master, walk)** on two feet. Eventually, when they've discovered the movements required for it, the neural pathways are fully formed. From this point onwards, walking becomes a natural motion that requires little conscious thought.

Have you ever learned to ride a bike, play tunes on an instrument, or mastered a sport over several years? Now that you have these skills, **5. … (be unlikely, they, vanish)** suddenly. For example, you **6 … (might, not, ride)** a bike for several years, but you will still be able to ride one with no additional lessons or guidance. Despite **7 … (call)** muscle memory, the body part responsible for retaining these skills is the brain. A region of the brain called the motor cortex sends signals to the muscles needed for each skill, with precise instructions to execute physical movements with accuracy. The more **8 … (deliver, these signals)** through messenger nerve cells called neurons, the smoother **9 … (be, each resulting action)**. When these become stored in your long-term memory, skill-based memories like riding a bike are recalled as soon as you **10 … (sit)** in the saddle.

1……………………………….            5…………………………….            9……………………………….

2…………………………….....            6…………………………….            10……………………………….

3…………………………….            7…………………………….

**Continue reading the text and decide which ONE functional word best fits each gap (11-15). Write your answers in the space provided below the text. Spelling counts!**

If you observe a professional athlete in the middle of a football match or launching themselves over a high jump bar, the ease of their movements can seem incredible. **11 …** are not superpowers, but the work of perfected muscle memory. **12 …** to their relentless training schedules, the muscles that they need to control the dribble of a ball or expertly arch themselves over obstacles in athletics are almost pre-programmed. The strong neural connections **13 …** they have made to connect their mind and the rest of their body meant that while the brain focuses on the tactics of the competition, the body can perform the complex moves **14 …** much conscious thought. An additional benefit to muscle memory in professional sportspeople is that it allows them to take breaks from the sport. Even though they may lose fitness during off-season months, not long after returning to training, their muscles can bounce back to the work they were previously trained **15 …** .

10……………………………            12……………………………..            14…………………………….

11……………………………            13……………………………            15…………………………….

**Total Points: ............../15 pts**

# V O C A B U L A R Y

**Complete the gaps 1-10 in the following passage with the most suitable answer (A- D). Circle your answers.**

I live in the lovely, late-Victorian seaside town of Saltburn, on the northeast coast near Middlesbrough. We have a pier, ten miles of sandy beaches, and a unique-to-the-UK water-driven tramway built in 1884 which **1 …** day-trippers (and me) 120ft up the grassy cliffs to the wide promenade and the pretty town beyond. The views from the promenade are **2 …** , so it is a popular place for kids to play, people to walk their dogs, and pensioners to **3 …** by the various gardens. It was on this prom, back in September, that Gemma Booth noticed marks on the tarmac which seemed to indicate that the council was about to move the lampposts. Why on earth, she wondered, would the council want to do that?

What they were planning, it **4 …**, was slicing the width of the promenade in half to make room for parking spaces for motorhomes. No consultation with the locals. Not a second's thought about what this would do to the look and **5 …** of the little town. Just a means of increasing the parking in Saltburn and further down the line charging a parking fee — useful money for a council on the **6 …** of bankruptcy.

"I spent most of my summers sitting on the prom watching the sea and the birds," says Gemma, who has since seen her life taken over by the protest group she founded, Saltburn Against Promenade Changes. Protests were held by the steps down to the beach. Gemma located a friendly barrister who helped them **7 …** the complex legal issues. The council soon learnt what it was messing with and had to hold a proper consultation of the townsfolk, via online survey. The results came out on Friday: 69 per cent opposed the changes. But it was a **8 …** thing, and if Gemma Booth hadn't seen those markings by the lampposts, the character of the clifftop would have been changed, most likely for ever.

Saltburn is a comparatively affluent area and its locals known to be — as one protester, David Jinks, put it — more gobby than most. Think of the countless city boroughs, villages, and towns which are unlucky enough not to have such **9 …** residents.

We are still paying for the town-planning crimes of the 1960s. Which is why this tiny victory in Saltburn is not really of **10 …** small importance, but kind of vital if we wish to reserve the aesthetically pleasing character of the towns in which we live. Thank you, then, Gemma Booth.

| 1 | A heaves | B hustles | C hoists | D hovers |
|---|---|---|---|---|
| 2 | A splendour | B spectacular | C spotless | D staggering |
| 3 | A sneak | B loom | C commute | D dawdle |
| 4 | A divulged | B transpired | C leaked | D revealed |
| 5 | A feel | B sense | C touch | D show |
| 6 | A boundary | B track | C verge | D point |
| 7 | A navigate | B steer | C pilot | D manipulate |
| 8 | A clear-cut | B top-down | C near-miss | D close-run |
| 9 | A circumspect | B weary | C vigilant | D pensive |
| 10 | A vanishingly | B faintly | C tiny | D weeny |

**Total Points: ............./10pts**

R E A D I N G   C O M P R E H E N S I O N

**Read the following article about wetlands.  Complete gaps 1-10 with a suitable phrase (A-M) from the list on the following page.  Three phrases will remain unmatched.**

Geoffrey Hinton, the computer scientist who is often called "the godfather of A.I.," handed me a walking stick.  "You'll need one of these," he said.  Then he headed off along a path through the woods to the shore.  "We had a bonfire here," Hinton said.  We were on a ledge of rock jutting out into Ontario's Georgian Bay, which stretches to the west into Lake Huron.  Islands dotted the water; Hinton had bought this one in 2013, when he was sixty-five, after selling a three-person startup to Google for forty-four million dollars.  Before that, he'd spent three decades as a computer-science professor at the University of Toronto—a leading figure in an unglamorous subfield known as neural networks, **1 …** .

Originally, artificial neural networks **2 …** —image categorization, speech recognition, and so on— most researchers considered them to be at best mildly interesting, or at worst a waste of time.  For decades, Hinton tinkered, building bigger neural nets structured in ingenious ways.  He imagined new methods for training them and helping them improve.  He recruited graduate students, convincing them that neural nets weren't a lost cause.  He thought of himself as participating in a project **3 …** .  He didn't anticipate the speed with which, about a decade ago, neural-net technology would suddenly improve.  Computers got faster, and neural nets, drawing on data available on the Internet, started transcribing speech, playing games, translating languages, even driving cars.

There are many reasons to be concerned about the advent of artificial intelligence.  It's common sense to worry about human workers being replaced by computers, for example.  But Hinton has joined many prominent technologists in warning that A.I. systems may start to think for themselves.  "People say, 'It's just glorified autocomplete,'" he told me.  "Now, let's analyze that.  Suppose you want to be really good at predicting the next word.  If you want to be really good, you have to understand what's being said.  That's the only way.  So by training something to be really good at predicting the next word, **4 …** .  Yes, it's 'autocomplete'—but you didn't think through what it means to have a really good autocomplete."

Skeptics who say that we overestimate the power of A.I. point out that a great deal separates human minds from neural nets.  For one thing, neural nets don't learn the way we do:  we acquire knowledge organically, by having experiences and grasping their relationship to reality and ourselves, while they learn abstractly, by processing huge repositories of information about a world **5 …** .  But Hinton argues that the intelligence displayed by A.I. systems transcends its artificial origins.  He believes that, by analyzing human writing, a large language model like GPT learns how the world works, producing a system capable of thought; writing is only part of what that system can do.

How useful—or dangerous—will A.I. turn out to be?  No one knows for sure, in part because neural nets are so strange.  In the twentieth century, many researchers wanted to build computers that mimicked brains.  But, although neural nets like OpenAI's GPT models are brain-like in that they involve billions of artificial neurons, **6 …** .  Today's A.I.s are based in the cloud and housed in data centers that use power on an industrial scale.  Clueless in some ways and savant-like in others, they reason for millions of users, but only when prompted.  They are not alive.  They have probably passed the Turing test—the long-heralded standard, established by the computing pioneer Alan Turing, which held that any computer that could persuasively imitate a human in conversation could be said,

reasonably, to think. And yet our intuitions may tell us that nothing resident in a browser tab **7 …** . The systems force us to ask if our kind of thinking is the only kind that counts.

Hinton is often asked if he regrets his work. He doesn't. When he began his research, he says, no one thought that the technology would succeed; even when it started succeeding, **8 …** . Precisely because he thinks that A.I. is truly intelligent, he expects that it will contribute to many fields. Yet he fears what will happen **9 …** . He believes that autonomous weapons should be outlawed but warns that even a benign autonomous system could wreak havoc. "If you want a system to be effective, you need to give it the ability to create its own subgoals," he said. "Now, the problem is, there's a very general subgoal that helps with almost all goals: get more control. The research question is: how do you prevent them from ever wanting to take control? And nobody knows the answer."

"So what should we do?" I asked. "I don't know," he said. "It would be great if this were like climate change, where someone could say, 'Look, we either have to stop burning carbon or we have to find an effective way to remove carbon dioxide from the atmosphere.' There, **10 …** . Here, it's not like that."

**A** no one thought that it would succeed so quickly

**B** were only moderately successful at the tasks they undertook

**C** they're actually profoundly different from biological brains

**D** will be the big challenge of the next decade

**E** that might come to fruition a century in the future

**F** you know what the solution looks like

**G** that they don't really inhabit

**H** which was inspired by the way neurons are connected in the brain

**I** he thought that he'd contributed all he could

**J** when, for instance, powerful people abuse it

**K** could really be thinking in the way we do

**L** you're actually forcing it to understand

**M** they are starting to change the world in unpredictable ways

**Total points:............./10pts**

# L I S T E N I N G   C O M P R E H E N S I O N

**You will listen to a report about recent research on oysters and their sleep.  For questions 1 to 5, circle one correct answer according to the information you here.  You will hear the text only once.**

1. In the experiment, Damien Tran found it surprising that the levels of nighttime light below the intensity of the full moon _____.

    A. disrupted the internal clocks of the oysters.

    B. failed to perturb the oysters' daily rhythm.

    C. increased the oysters' shell movement.

    D. had the same effect on the oysters as the rising sun.

2. Unlike certain related species, oysters are likely to use patches of specialized cells on their skin for light detection, _____.

    A. although the functioning of these cells remains elusive.

    B. accompanied by well-defined eye-like organs.

    C. which was uncovered by Tran and colleagues' study.

    D. revealing an unknown mechanism in oyster vision.

3. The researchers observed that exposure to artificial light at night caused the oysters in the experimental tanks to _____.

    A. close their shells during the early evening.

    B. become the most active when the lights dimmed.

    C. engage in unpredictable shell movements.

    D. display increased activity in the middle of the day.

4. According to Emily Fobert, a marine ecologist, the researchers' decision to expose only one tank of oysters to each level of artificial light _____.

    A. enhanced the study's robustness.

    B. might have introduced potential distortions.

    C. ensured consistent and reliable results.

    D. was crucial for accurate data collection.

5. Laura Payton stresses the necessity of protecting namely oysters from artificial light at night because _____.

    A. they are exceptionally resilient to environmental changes.

    B. they play a pivotal role in water filtration and shoreline protection.

    C. other marine species can adapt more readily.

    D. their vulnerability to disturbances stems from their inability to escape.

**Total points:............ /5pts**

**Zoznám použitej literatúry:**

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