

Task 5.

Read the text and complete the two tasks on the next page.

The clock that changed the meaning of time

Deep inside a **medieval** (a) watchtower, Markus Marti presides over the passage of time. Several times a week in the heart of Bern, Switzerland, the retired engineer leads a small group of visitors up a narrow twisting staircase. Then, (0) A, he explains how a **maze** (b) of iron parts powered by a swinging pendulum has, second by second, counted down the last half millennium. Marti has maintained the machine for nearly 40 years.

The clock, known as the Zytglogge, does not just count the seconds. It also powers an hourly performance incorporating a dancing jester, parading bears and (77) who flips an hourglass and opens his mouth with each chime of the bell.

An oversized cuckoo clock? Maybe. But do not **underestimate** (c) its influence. The tower inspired a young patent clerk named Albert Einstein, and changed (78) . Today, the landmark anchors a capital city recognised by UNESCO for its **intact** (d) medieval core. On sunny afternoons, crowds fill the square below to watch the show, tourists gathering as the minute hand approaches the XII at the top of the clock's massive face. On rainy winter nights, the scene may unfold for just a few stray cats. But even when no one watches, (79) .

Marti has a delightful job title, which **roughly** (e) translates as the Governor of Time, although his responsibilities are quite serious. Every day, he or one of his two assistants must wind the clock, a full-body effort that pulls a set of stone weights to the top of the 54.5m tower. As the load **gradually** (f) descends, (80) , which rings every 15 minutes. Bern residents **pace** (h) their lives to the sound.

Einstein heard the toll one evening in May 1905. He had been confounded by a scientific paradox for a decade, and when he gazed up at the tower, he suddenly imagined an unimaginable scene. What, he wondered, would happen if a streetcar raced away from the tower (81) ? If he was sitting in the streetcar, he realised, his watch would still be ticking. But looking back at the tower, the clock – and time – would seem to have stopped. It was a break-through moment. Six weeks later, he finished a paper outlining a "special theory of relativity". Later he would show how space-time, as he called it, affected mass, energy and gravity, foreshadowing the nuclear age, space travel, and our understanding of how stars and celestial bodies interact.

Time, indeed, is relative. Spend an hour with a lover (82) , and it will flash by in seconds. Sit in traffic and it may drag on for days. But whether you are hiking the Alps, contemplating physics or answering emails, the gears inside Bern's tower slowly turn. Even Marti, a man of logic and science, says he can (83) . "Sometimes when I'm alone I think about time," he says. "Why does it move sometimes slowly, sometimes fast?"

As our visit finishes up, he inserts a cog and jams a gear, showing how he can pause the movement for repairs or adjustments. The clockwork halts and tension rises in the suddenly silent room. From this **perch** (i) and perspective, one could believe (84) . Marti restarts the machine, pushing the pendulum to recapture the lost seconds. The ticking resumes, and everyone begins to relax. A few minutes later, I return to Bern's cobbled streets, blinking in the sun as if awaking from a dream.

Looking up at the clock, I search for its gilded rooster, which ends each hourly performance by (85) , bellows-powered crow. For more than 500 years, Bern residents have been told to listen for it and **heed** (k) its message: time is always marching on, so enjoy the next hour of your life.

Task 5.1. Questions 77–85

Nine phrases (B–N) have been removed from the text. Match them into the gaps (77–85). There are **two extra phrases** that you do not need to use.

An example (0) has been done for you.

A	using a wooden baton as a pointer
B	at the speed of light
C	fall under the spell of his machine
D	time marches on inside the tower
E	raising its wings and emitting a three-note
F	the way we think about the universe
H	or laughing with friends
I	decoded the elaborate clockwork
K	a gilded figure named Chronos
L	it powers the timepiece
M	that time has stopped
N	waiting for something

Task 5.2. Questions 86–91

Some of the words in the text are written **in bold** and marked with a letter (a–k). Match the words to their definitions. Write the **letter of the word** (b–k) in the gap in front of its definition (86–91). In the text, there are **two extra** words in bold that you **do not need** to use.

An example (0) has been done for you.

0. a – *adj. connected with the Middle Ages*
86. – *adv. approximately but not exactly*
87. – *adj. complete and not damaged*
88. – *v. to guess that the amount, cost or size of something is smaller than it really is*
89. – *n. a large number of complicated details that are difficult to understand*
90. – *v. to pay careful attention to somebody's advice or warning*
91. – *adv. slowly, over a long period of time*

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