

In this task, you will listen to an academic talk. You will then read four questions and choose the correct answer.

Talk 1: Environmental Science

What is the main topic of the talk?

- ☐ Why solar and wind power are unreliable
- ☐ A way to save extra energy from renewable sources
- ☐ Why electricity prices change over time
- ☐ How energy companies profit from changing electricity prices

Why does the speaker mention a giant battery?

- ☐ To suggest that batteries will soon replace reservoirs
- ☐ To point out a weakness of pumped hydro storage
- ☐ To explain how the turbines generate electricity
- ☐ To explain the purpose of the upper reservoir

What can be inferred about pumped hydro storage?

- ☐ It is profitable because of differences in electricity prices.
- ☐ It produces more electricity than it uses.
- ☐ It loses too much energy to make economic sense.
- ☐ It is a recently developed technology.

What will the speaker most likely discuss next?

- ☐ Ways to reduce the energy lost during pumping
- ☐ Ways to build reservoirs in areas without hills
- ☐ Storage methods that can be used in more locations
- ☐ Why electricity demand rises at certain times

Talk 2: Biology

What is the main topic of the talk?

- ☐ Why bacteria reproduce faster than other organisms
- ☐ How antibiotics create new types of bacteria
- ☐ How a medical problem illustrates natural selection
- ☐ Why doctors should prescribe fewer antibiotics

According to the speaker, what is the role of the antibiotic in resistance?

- ☐ It causes genetic changes that make bacteria resistant.
- ☐ It removes bacteria that compete with resistant ones.
- ☐ It strengthens the bacteria that survive.
- ☐ It kills bacteria before they can become resistant.

Why does the speaker mention the common cold?

- ☐ To show that colds are caused by resistant bacteria
- ☐ To explain why some bacterial infections cannot be treated
- ☐ To compare how viruses and bacteria spread
- ☐ To give an example of antibiotics being used unnecessarily

What can be inferred about natural selection in bacteria?

- ☐ Its effects can be observed within a human lifetime.
- ☐ It happens only in hospital environments.
- ☐ It takes thousands of years, as in other species.
- ☐ It can be mostly stopped by antibiotics.

Talk 1: Pumped Hydro Storage

Listen to a talk in an environmental science class.

Solar panels and wind turbines have a timing problem. They produce the most electricity when the sun is shining or the wind is blowing, not necessarily when people need it. And electricity is surprisingly hard to store in large amounts. So how do we save that extra energy for later?

One of the oldest answers is pumped hydro storage. It uses two reservoirs, one at the bottom of a hill and one at the top. When there's extra electricity and prices are low, it's used to pump water uphill. Then, when demand rises, the water is released back down through turbines, generating electricity again.

In a way, the upper reservoir works like a giant battery.

Now, the process isn't perfectly efficient. Some energy is always lost along the way. But because that electricity is bought when it's cheap and sold when it's expensive, the system still makes economic sense.

The bigger limitation is geography. You need hills, plenty of water, and a lot of land. So next, let's look at some newer storage methods that don't depend on the landscape.

Talk 2: Antibiotic Resistance

Listen to a talk in a biology class.

Today I want to look at natural selection, the idea that individuals best suited to their environment are more likely to survive and pass on their traits. We usually think it takes thousands of years. But one of the clearest examples is happening right now, in hospitals worldwide.

When you take an antibiotic for a bacterial infection, the drug kills most of the bacteria. But in any large population, a few bacteria may carry a small genetic difference that lets them survive the drug. Those survivors then multiply, and they pass that resistance on. Eventually, the infection is caused mostly by bacteria the antibiotic can't kill.

Note that the antibiotic doesn't create resistance. The resistant bacteria were already there. The drug simply removes their competition, giving them room to take over.

This is one reason doctors stress taking antibiotics exactly as prescribed. Using them carelessly gives the toughest bacteria more chances to survive. Overuse is a problem too. Antibiotics are useless against viruses, so taking them for a common cold doesn't help, but it gives resistant bacteria another chance to spread.

And because bacteria reproduce so quickly, sometimes in less than an hour, this process can unfold within a few years instead of millennia. That speed is why antibiotic resistance is now one of medicine's most serious challenges.

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