TOEFL listening Practice Paper 9

Question 1

Narrator: Listen to part of a lecture from a chemistry class.

Professor: Ok, put away your lab coats, please. Today we're going to cover a bit of history. Yes, yes, I know, this is a chemistry class, not a history class, but we'll be talking about the history of that most famous of chemical diagrams, the periodic table of elements. Open up your textbooks to page 143.

To understand where the table comes from, first, we need to look back to when the Greek philosopher Aristotle proposed that everything is divided into four main elements: earth, fire, air, and water. Although it doesn't sound very scientific to us now, Aristotle was actually closer to describing the four states of matter than he was in pinpointing the elements. I mean… solid, liquid, gas, and plasma. Nevertheless, Aristotle's initial classification of matter into four main types laid the groundwork for future scientists to ultimately discover and understand the properties of all of the individual elements we know today. The discovery of elements was a gradual process, with many different scientists having a hand in the discoveries. For example, in 1669 and 1680, both Hennig Brand and Robert Boyle independently discovered phosphorus. In 1789, Antoine Lavoisier published his Treaty on the Chemical Elements, in which he defined for the first time what an element actually is, and included a list. The list continued to grow.

As more and more elements were discovered, scientists around the world searched for a way to classify them. Now, they knew that elements interacted with each other in predictable ways. Several different methods to classify the elements were proposed. The first to notice a pattern within the elements was the chemist Johann Dobereiner. In 1829, he proposed a system called the Law of Triads in which he arranged the elements according to their atomic mass in groups of three. Then, in 1862, French geologist A.E. Beguyer de Chancourtois noticed that when ordered by atomic weights, similar elements would occur with a certain regularity. This characteristic is known as periodicity. Chancourtois used this discovery to classify the elements into a spiral form based on weight, which he published in 1862. It was the first actual written classification of the elements (therefore you could technically call it the first periodic table) although it was largely ignored at the time. Turn to page 144 for an excerpt. In 1863, John Newlands created a system he called the Law of Octaves. He compared his method of classification to that of musical octaves, saying that at intervals of eight, elements show repetition in chemical and physical properties. Newlands grouped the 56 known elements into 11 groups. His system was also not widely accepted.

It was a Russian who ultimately solved the puzzle. Dmitri Mendeleev published in 1869 what is now considered the first accurate periodic table of elements. His paper was called On the Relationships of the Properties of the Elements to Their Atomic Weights. He arranged all the known elements by atomic mass (65 at the time) but… and this is important… not exclusively. In order to fit with their recurring chemical and physical properties, some elements had to be moved to places where their mass did not match up. He tidied up the work of his predecessors and contemporaries (correcting mistakes in atomic mass and such) to make his table more accurate, but some elements were still not listed according to their mass as he and his contemporaries believed they should be. So, Mendeleev went on to predict the discovery of several new elements, which he saw as gaps in his chart. He even left the blanks in his published copy. He plotted all the known elements based on their recurring – or periodic – characteristics, and because of this he was able to even predict the properties of the missing elements. And, for the most part, he was right. His table had more rows than previous attempts at classification, which highlighted related elements' recurring characteristics by placing them in the same column. Interestingly, a German chemist named Lothar Meyer produced, completely independently of Mendeleev's work – a very similar periodic table. Unfortunately for him though, it was published the year after Mendeleev's and so Mendeleev is generally credited with creating the periodic table.

Mendeleev's periodic table became the accepted method of classification of the elements, but there have been some changes made since. When the noble gases were discovered in the late 1800s, these were added to the table in their own group. And as atomic science progressed, more information has been added to each of the elements. Scientists such as Rutherford, Moseley, and Bohr all contributed significantly to the understanding of elemental properties on an atomic level. Glenn Seaborg, an American scientist, helped to discover the transuranic elements in the 1940s and has an element named after him… Seaborgium, element 106.

Exercise 1

What is the main topic of discussion?

A. Chronological history of Victorian chemistry
B. The varied attempts at element classification
C. Mendeleev's life and ultimate achievements
D. Publication of chemistry works in the 1800s

Exercise 2

Fill in the gaps in the given transcript.

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Exercise 3

Select the word with the British spelling - NOT the American spelling.

- ☐ analyzing.
- ☐ manoeuvre.
- ☐ boogeyman.
- ☐ bogeyman.
- ☐ theater.
- ☐ learned.
- ☐ pajamas.
- ☐ gray.
- ☐ pyjamas.
- ☐ learnt.
- ☐ theatre.
- ☐ grey.
- ☐ analysing.
- ☐ maneuver

Question 2

(Narrator): Listen to a high school principal talking to the school's students.

(Man): I have a very special announcement to make. This year, not just one, but three of our students will be receiving national awards for their academic achievements. Krista Conner, Martin Chan, and Shriya Patel have all been chosen for their hard work and consistently high marks. It is very unusual for one school to have so many students receive this award in a single year.

(Narrator): What is the subject of the announcement?

1. What is the subject of the announcement?

The school will be adding new classes.
Three new teachers will be working at the school.
Some students have received an award.
The school is getting its own newspaper.

Question 3

(Narrator): Listen to a teacher making an announcement at the end of the day.

(Man): Remember that a team of painters is coming in tomorrow to paint the walls. In this box on my desk are sheets of plastic that I want you to slip over your desks. Make sure you cover your desks completely so that no paint gets on them. Everything will be finished and the plastic will be removed by the time we return on Monday.

(Narrator): What does the teacher want the students to do?

1. What does the teacher want the students to do?

Take everything out of their desks
Put the painting supplies in plastic bags
Bring paints with them to school on Monday
Put covers on their desks to keep the paint off

Question 4

(Narrator): Listen to a conversation between two friends at school.

(Boy): Hi, Lisa.

(Girl): Hi, Jeff. Hey, have you been to the art room today?

(Boy): No, why?

(Girl): Well, Mr. Jennings hung up a notice about a big project that's going on downtown. You know how the city's been doing a lot of work to fix up Main Street — you know, to make it look nicer? Well, they're going to create a mural.

(Boy): You mean, like, make a painting on the entire wall of a building?

(Girl): Exactly!

(Boy): But where?

(Girl): It's that big wall on the side of the public library. And students from this school are going to do the whole thing ... create a design, and paint it, and everything. I wish I could be a part of it, but I'm too busy.

(Boy): [excitedly] Cool! I'd love to help design a mural. Imagine everyone in town walking past that wall and seeing my artwork, every day.

(Girl): I thought you'd be interested. They want the mural to be about nature, so I guess all the design ideas students come up with should have a nature theme.

(Boy): That makes sense — they've been planting so many trees and plants along the streets and in the park.

(Girl): If you're interested you should talk with Mr. Jennings.

(Boy): [half listening, daydreaming] This could be so much fun. Maybe I'll try to visit the zoo this weekend ... you know, to see the wild animals and get some ideas, something to inspire me!

(Girl): [with humor] Well maybe you should go to the art room first to get more information from Mr. Jennings.

(Boy): [slightly sheepishly] Oh yeah. Good idea. Thanks for letting me know, Lisa! I'll go there right away.

(Narrator): Now answer the questions.

1. What are the speakers mainly discussing?

A new art project in the city
An assignment for their art class
An art display inside the public library
A painting that the girl saw downtown

2. Why is the boy excited?

A famous artist is going to visit his class.
His artwork might be seen by many people.
His class might visit an art museum.
He is getting a good grade in his art class.

3. Where does the boy say he may go this weekend?

To the zoo
To an art store
To Main Street
To the public library

4. Why does the girl suggest that the boy go to the art room?

So that he can hand in his homework
So that he can sign up for a class trip
So that he can see a new painting
So that he can talk to the teacher

Question 5

(Narrator): Listen to a teacher talking in a biology class.

(Woman): We've talked before about how ants live and work together in huge communities. Well, one particular kind of ant community also grows its own food. So you could say these ants are like people — like farmers. And what do these ants grow? They grow fungi [FUN-guy]. Fungi are kind of like plants — mushrooms are a kind of fungi. These ants have gardens, you could say, in their underground nests. This is where the fungi are grown.

Now, this particular kind of ant is called a leafcutter ant. Because of their name, people often think that leafcutter ants eat leaves. If they cut up leaves they must eat them, right? Well, they don't! They actually use the leaves as a kind of fertilizer. Leafcutter ants go out of their nests looking for leaves from plants or trees. They cut the leaves off and carry them underground . . . and then feed the leaves to the fungi — the fungi are able to absorb nutrients from the leaves. What the ants eat are the fungi that they grow. In that way, they are like farmers!

The amazing thing about these ants is that the leaves they get are often larger and heavier than the ants themselves. If a leaf is too large, leafcutter ants will often cut it up into smaller pieces—but not all the time. Some ants carry whole leaves back into the nest. In fact, some experiments have been done to measure the heaviest leaf a leafcutter ant can lift without cutting it. It turns out, it depends on the individual ant. Some are stronger than others. The experiments showed that some "super ants" can lift leaves about 100 times the weight of their body!

(Narrator): Now answer the questions.

1. What is the main topic of the talk?

A newly discovered type of ant

A type of ant with unusual skills
An increase in the population of one type of ant
A type of ant that could be dangerous to humans

2. According to the teacher, what is one activity that both leafcutter ants and people do?

Clean their food
Grow their own food
Eat several times a day
Feed their young special food

3. What does the teacher say many people think must be true about leafcutter ants?

They eat leaves.
They live in plants.
They have sharp teeth.
They are especially large.

4. What did the experiments show about leafcutter ants?

How fast they grow
Which plants they eat
Where they look for leaves
How much weight they can carry