Periodic Table Challenge

1. 1. One of the uses of boron is in nuclear power plants to absorb neutrons. What happens when boron absorbs a neutron?

Scored 1 of 1 point

* 1. Boron emits a beta-particle and nitrogen atom is produced
  2. After a while the neutron is released again with a lower energy
  3. **Boron emits an alpha-particle and lithium atom is produced***Your answer*
  4. Carbon isotope is produced

1. 2. What made cadmium popular when it was discovered in the early 1800s?

Scored 1 of 1 point

* 1. Cadmium was used to make the Eiffel tower
  2. Cadmium was the lightest known metal
  3. Cadmium had the lowest melting point of any known metal
  4. **Cadmium offered rich yellow colors to painters***Your answer*

1. 3. Flerovium is special for the Periodic Table. Which one of these statements about flerovium is not true?

Scored 1 of 1 point

* 1. Flerovium is the heaviest element whose chemistry has been studied
  2. **Isotopes of flerovium are stable for several days***Your answer*
  3. Flerovium is near the island of stability
  4. Flerovium reveals the relativistic effects of heavy elements

1. 4. The 1992 Nirvana song ‘Lithium’ describes a person who suffers from a condition treated with this element. Which condition is it?

Scored 1 of 1 point

* 1. Constipation
  2. **Depression***Your answer*
  3. Hallucination
  4. Palpitations

1. 5. Which one of these statements about titanium is incorrect?

Scored 1 of 1 point

* 1. **Titanium is less dense and stronger than aluminium***Your answer*
  2. Titanium is the strongest metal per weight
  3. Titanium does not dissolve in mineral acids
  4. Titanium is biocompatible and therefore used in implants

1. 6. Yttrium was discovered in 1787 by Finnish chemist Johan Gadolin. Which one of the following does not contain yttrium?

Scored 1 of 1 point

* 1. Fake diamonds
  2. Superconductors
  3. Rocks taken from the Moon
  4. **Printer paper***Your answer*

1. 7. Which one of these popular soft drinks used to contain lithium?

Scored 1 of 1 point

* 1. Fanta
  2. Pepsi
  3. **7 Up***Your answer*
  4. Coca Cola

1. 8. Which one of the following statements about oxygen is true?

Scored 0 of 1 point

* 1. Oxygen has always been a significant part of Earth’s atmosphere
  2. It is the only element in ozone
  3. Oxygen does not combine with any of the noble gases
  4. **Life is not possible without oxygen***Your answer*

1. 9. Niobium was discovered in the 1800s but it received its current name from IUPAC in 1949. What was this element called before?

Scored 0 of 1 point

* 1. **ilmenium***Your answer*
  2. columbium
  3. pelopium
  4. tantalum

1. 10. Which one of these facts about protactinium is unique only to this element?

Scored 0 of 1 point

* 1. Its name has been once officially revised by IUPAC
  2. Its name contains the name of another element
  3. It was discovered by Lise Meitner
  4. **It has a standard atomic weight despite having no stable isotopes***Your answer*

1. 11. Which one of the following statements about NASA’s use of promethium is correct?

Scored 1 of 1 point

* 1. Promethium was used in the nuclear battery of the Mars rover Curiosity
  2. Promethium was used as fuel in the Voyager 1 spacecraft
  3. **Promethium was used as luminescent paint on the lunar rover of the Apollo 11 mission***Your answer*
  4. Promethium was used in the windows of the Space Shuttle Challenger to block harmful light

1. 12. Copper is known for its ability to form different alloys. Which one of the following is not a copper alloy:

Scored 1 of 1 point

* 1. **steel***Your answer*
  2. bronze
  3. Constantan
  4. brass

1. 13. Palladium is located next to silver in the Periodic Table. Which one of the following statements about palladium is not true?

Scored 1 of 1 point

* 1. **Palladium is used in mirrors***Your answer*
  2. Palladium can absorb large amounts of hydrogen
  3. Palladium is used in jewelry to whiten gold
  4. Palladium is a noble metal

1. 14. Iodine is an essential nutrient but can also be very toxic. In what form is iodine most toxic to humans?

Scored 0 of 1 point

* 1. Iodine salts are toxic
  2. **Its toxicity depends on the solvent used to dissolve the iodine***Your answer*
  3. In its elemental form
  4. Organic iodine compounds are toxic

1. 15. Which one of these statements about neptunium is correct?

Scored 1 of 1 point

* 1. Neptunium is a key component of atomic bombs
  2. Neptunium was named after the god Neptune
  3. **The Nobel prize was given for its false discovery***Your answer*
  4. Neptunium is not found in minerals

1. 1. Which one of the following statements about manganese is incorrect?

Scored 1 of 1 point

* 1. **Manganese is found in all magnets***Your answer*
  2. Manganese compounds are used as antiseptics
  3. The addition of manganese gives steel extra hardness
  4. Manganese is used as an additive in gasoline

1. 2. Copper is known for its ability to form different alloys. Which one of the following is not a copper alloy:

Scored 1 of 1 point

* 1. Constantan
  2. **steel***Your answer*
  3. bronze
  4. brass

1. 3. Some say that smartphones would be ten times bigger if not for neodymium. What makes neodymium so special?

Scored 0 of 1 point

* 1. Neodymium is the lightest metal
  2. Neodymium makes shatterproof glass
  3. Neodymium makes very strong magnets
  4. **Neodymium makes extremely thin wires***Your answer*

1. 4. Which one of these statements about argon is correct?

Scored 0 of 1 point

* 1. A jet of hot argon is used in argon welding
  2. Mendeleev believed that argon was in fact an N3 molecule
  3. Argon was discovered in 1895
  4. **Argon consists of only one isotope in nature***Your answer*

1. 5. Which one of these statements about the discovery of curium is true?

Scored 0 of 1 point

* 1. Curium was produced by bombarding uranium with neutrons
  2. Curium was produced by bombarding plutonium with alpha particles
  3. Curium was discovered in the late 1960s
  4. **Curium is named after the chemist who first identified it***Your answer*

1. 6. The original symbol proposed for copernicium by its discoverers was Cp, but it was not accepted by IUPAC. Why did this happen?

Scored 0 of 1 point

* 1. Cp had been used as a symbol for another element
  2. The symbol Cp is hard to pronounce
  3. Cn was a more logical choice
  4. **The discoverers missed the deadline***Your answer*

1. 7. Technetium was discovered in Italy in 1937. Which one of the following statements about technetium is false?

Scored 0 of 1 point

* 1. Technetium is not found on Earth naturally
  2. Technetium is the lightest element without stable isotopes
  3. **The properties of technetium were predicted by Mendeleev more than 50 years before its discovery***Your answer*
  4. Technetium was named to highlight that it was made artificially

1. 8. Thulium is an element that is difficult to isolate. It has few uses specific to its properties, one of them listed below. Which one?

Scored 1 of 1 point

* 1. Thulium is used as a detonator in atomic bombs
  2. Thulium is used as an immune system stimulant
  3. **Thulium is used as a local source of X-rays***Your answer*
  4. Thulium is used as a high-cost alloy in jewelry

1. 9. Which one of these products does not involve uranium?

Scored 0 of 1 point

* 1. Nuclear batteries
  2. **Counterweights in airplanes***Your answer*
  3. Special ammunition
  4. False teeth

1. 10. Four elements are named after capital cities: moscovium after Moscow, holmium after Stockholm, and hafnium after Copenhagen. Which city is lutetium named after?

Scored 1 of 1 point

* 1. **Paris***Your answer*
  2. Luxembourg
  3. Prague
  4. London

1. 11. Livermorium is produced in very small amounts and has such a short half-life that studying its properties is not yet possible. However, it has been speculated that its hydride will be:

Scored 1 of 1 point

* 1. an excellent hydrogen storage material
  2. **the smelliest compound***Your answer*
  3. the densest solid ever produced
  4. the substance with the highest hydrogen content

1. 12. What makes nihonium a unique element?

Scored 1 of 1 point

* 1. **Nihonium is the only element discovered in Asia***Your answer*
  2. Nihonium is named after Japanium, a fictional element of Mazinger comics
  3. Nihonium is the most radioactive element ever discovered
  4. Nihonium was the first element to be synthesized in the 21st century

1. 13. Platinum is a precious metal and has been used in important cultural and scientific artifacts. Which one of these objects does not contain platinum?

Scored 1 of 1 point

* 1. **The US Liberty bell***Your answer*
  2. The international prototype meter
  3. The international prototype kilogram
  4. The crown of Elizabeth II

1. 14. Californium has to be produced in special reactors and there are only three places in the world for it. Which one of these statements about californium is false?

Scored 0 of 1 point

* 1. It is used to start a nuclear fission reactor
  2. It is used as a rocket fuel
  3. It is used in nuclear medicine
  4. **It is used to check airport luggage***Your answer*

1. 15. Lithium-based batteries can easily be recharged. What is the predominant particle that is moving inside this type of battery?

Scored 1 of 1 point

* 1. Hydroxide ions
  2. Protons
  3. Electrons
  4. **Lithium ions***Your answer*