https://t.me/+CbbW8n6Up6U5OGE8

View hints View feedback

Play All

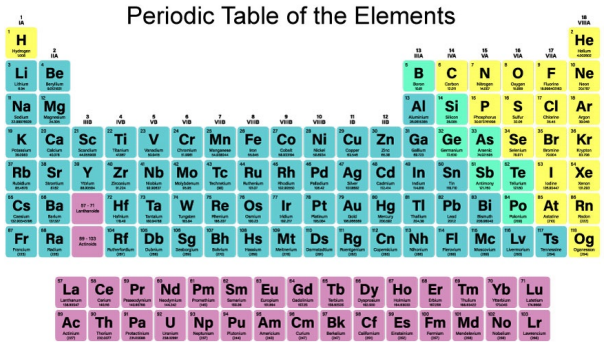
QUESTION 1

Select the best answer.

What are the trends in Period 3?

This table lists the characteristics of some elements of the Periodic Table:

Element and symbol	Atomic number	Tendency	Ion formation
Hydrogen, H	1	to lose one electron	tends to form ions with 1+ charge
Helium, He	2	to not gain or lose electrons	ion will not form
Lithium, Li	3	to lose one electron	tends to form ions with 1+ charge
Boron, B	5	to lose 3 electrons	tends to form ions with 3+ charge
Sodium, Na	11	to lose one electron	tends to form ions with 1+ charge
Silicon, Si	14	to gain or lose 4 electrons	rarely forms ions of 4+ or 4− charge
Argon, Ar	18	to not gain or lose electrons	ion will not form
Krypton, Kr	36	to not gain or lose electrons	ion will not form
Rubidium, Rb	37	to lose one electron	tends to form ions with 1+ charge



- Elements to the left tend to form negative ions, and elements on the far right tend not to form ions.
- Elements to the left tend to form positive ions, and elements on the far right tend not to form ions. ✓
- All elements in the same period form ions of the same charge.

https://t.me/+CbbW8n6Up6U5OGE8

Elements to the left tend to not form ions, and elements on the far right tend form positive ions.

QUESTION 3

Select the best answer from the drop-down menu to complete the sentence.

The atomic number of nitrogen is 7. The electron configuration of a nitrogen ion is: $1s^2\ 2s^2\ 2p^3$

The charge on the ion is 3− .

QUESTION 5

Select the best answers.

The atomic number of argon (Ar) is 18. Its electron configuration is: $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6$

Which characteristics of the electron configuration indicate that argon (Ar) is a stable noble gas?

- [x] The outermost 3s and 3p orbitals are completely filled.
- [ ] There are three sets of s orbitals.
- [ ] The 1st and 2nd principal energy levels are completely filled, so the atom will not react.

https://t.me/+CbbW8n6Up6U5OGE8

- [ ] There are two sets of p orbitals.
- [ ] There are 6 valence electrons in the outermost principal energy level.
- [x] There are 8 valence electrons in the outermost principal energy level. ✓

QUESTION 7

Select the best answer from the drop-down menu to complete the sentence.

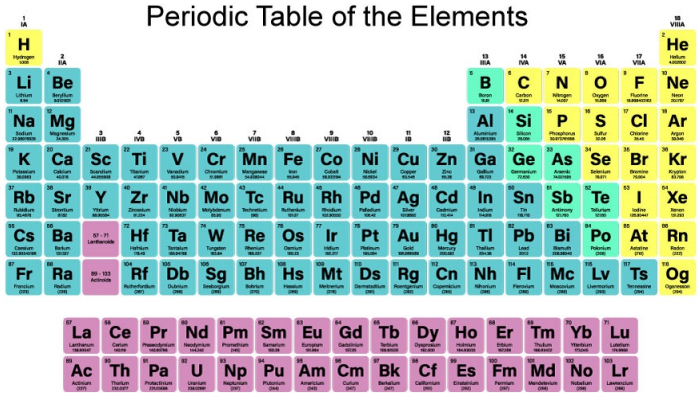
Filled s and p orbitals tend to make [stable ✓] electron configurations.

QUESTION 9

Select the best answer.

Which ***best*** describes the trends in group 1?

The table lists the characteristics of some elements of the Periodic Table:



https://t.me/+CbbW8n6Up6U5OGE8

Element and symbol	Atomic number	Tendency	Ion formation
Hydrogen, H	1	to lose one electron	tends to form ions with 1+ charge
Helium, He	2	to not gain or lose electrons	ion will not form
Lithium, Li	3	to lose one electron	tends to form ions with 1+ charge
Boron, B	5	to lose 3 electrons	tends to form ions with 3+ charge
Sodium, Na	11	to lose one electron	tends to form ions with 1+ charge
Silicon, Si	14	to gain or lose 4 electrons	rarely forms ions of 4+ or 4− charge
Potassium, K	19	to lose one electron	tends to form ions with 1+ charge
Krypton, Kr	36	to not gain or lose electrons	ion will not form
Rubidium, Rb	37	to lose one electron	tends to form ions with 1+ charge

- (●) tends to lose one electron and form 1+ ions ✓
- ( ) tends to gain one electron and form 1- ions
- ( ) tends to not gain or lose electrons and form 1+ ions
- ( ) tends to not lose or gain electrons and ions will not form

QUESTION 11

Select the best answer from the drop-down menu to complete the sentence.

Elements in [period 1 ✓] are the exception to the octet rule. These elements achieve stable electron configurations with only 2 valence electrons in their outer principal energy levels.

https://t.me/+CbbW8n6Up6U5OGE8

QUESTION 13

Select the best answer from the drop-down menu to complete the sentence.

The atomic number of neon (Ne) is 10. Neon is a noble gas with an electron configuration that meets the octet rule. The configuration of neon is: $1s^2\ 2s^2\ 2p^6$ ✓

QUESTION 15

Select the best answer.

Consider the following electron configuration: $1s^2\ 2s^2\ 2p^6\ 3s^1$

Which type of ion is likely to form?

- (●) positive ion with 1+ charge ✓
- ( ) positive ion with 3+ charge
- ( ) negative ion with 3- charge
- ( ) negative ion with 1+ charge

https://t.me/+CbbW8n6Up6U5OGE8

QUESTION 17

Select the best answers.

Chlorine, bromine, and iodine are all used in disinfecting and cleaning processes because these elements react quickly. These elements are all in group 17. Which of the following trends are true about these elements?

- [x] These elements have seven valence electrons. ✓
- [x] These elements will form 1- charged ions. ✓
- [ ] These elements will lose seven valence electrons.
- [ ] These elements will lose one electron.
- [ ] These elements will form 1+ charged ions.
- [ ] These elements will gain seven valence electrons.

QUESTION 19

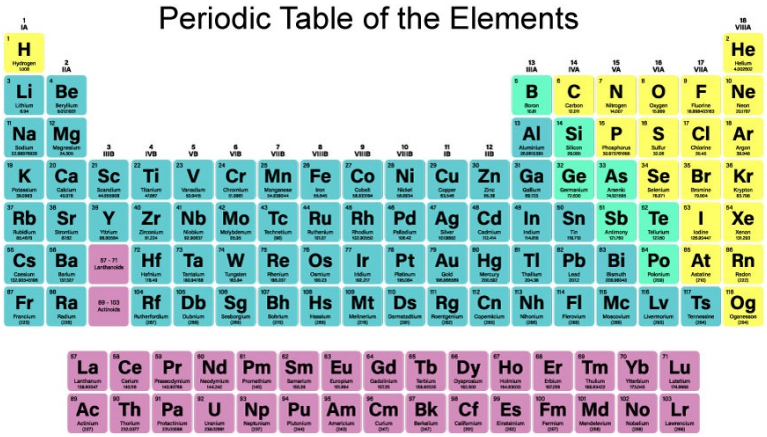
Select the best answer.

Consider the following electron configurations:

fluorine atom: $1s^2\ 2s^2\ 2p^5$

fluoride ion: $1s^2\ 2s^2\ 2p^6$

How many electrons does fluorine gain to form an ion?



- 2
- 1 ✓
- 8
- 6

QUESTION 21

Select the best answer from the drop-down menu to complete the sentence.

The octet rule states that atoms tend to gain, lose, or share electrons in order to have

8 ✓ valence electrons in their outer energy level.

QUESTION 23

https://t.me/+CbbW8n6Up6U5OGE8

https://t.me/+CbbW8n6Up6U5OGE8

Select the best answers.

Consider the following electron configurations:

cesium atom: $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2\ 3d^{10}\ 4p^6\ 5s^2\ 4d^{10}\ 5p^6\ 6s^1$

cesium ion: $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2\ 3d^{10}\ 4p^6\ 5s^2\ 4d^{10}\ 5p^6$

Which of the following statements are TRUE about the outer energy levels?

- [ ] Cesium became xenon by losing an electron.
- [x] The outermost energy level changed when the ion formed. ✓
- [ ] There are five electrons in the outermost energy level.
- [ ] There are 54 energy levels in the ion.
- [ ] The ion has a 1- charge because of the lost electron.
- [x] The outermost 6s orbital lost an electron. ✓

QUESTION 25

Select the best answer from the drop-down menu to complete the sentence.

On the periodic table, metals on the left side tend to [lose electrons ✓] to form positive ions.

https://t.me/+CbbW8n6Up6U5OGE8