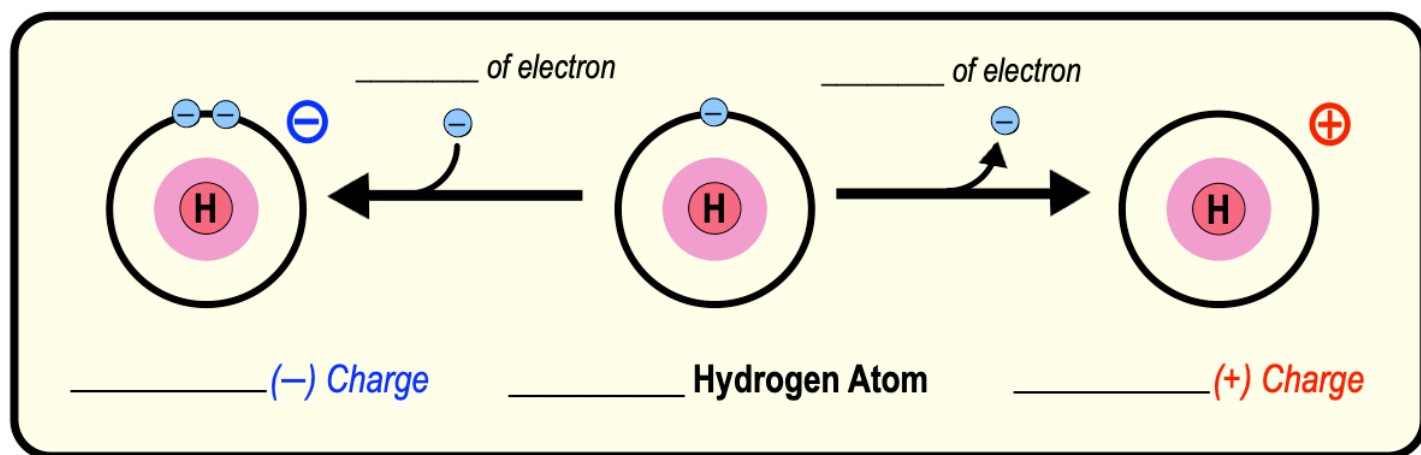


CONCEPT: IONIC BONDING

Ions: Anions vs. Cations

- _____: atoms or molecules with a net *electrical* _____.
 - ☐ Have either a negative or positive charge due to the *gain* or *loss* of _____.
 - ☐ _____: *negatively* (–) charged ions resulting from a _____ of an electron.
 - ☐ _____: *positively* (____) charged ions resulting from the _____ of an electron.

EXAMPLE: Anions vs. Cations.



PRACTICE: When atoms gain or lose electrons, they become negatively or positively charged. They are known as:

- a) Molecules. b) Isotopes. c) Ions. d) Radioactive. e) Unstable atoms.

PRACTICE: Which of the following statements is true of ALL atoms that are anions?

- a) The atom has more electrons than protons.
b) The atom has more protons than electrons.
c) The atom has fewer protons than a neutral atom of the same element.
d) The atom has more neutrons than protons.

PRACTICE: If oxygen has 9 electrons it will be a _____:

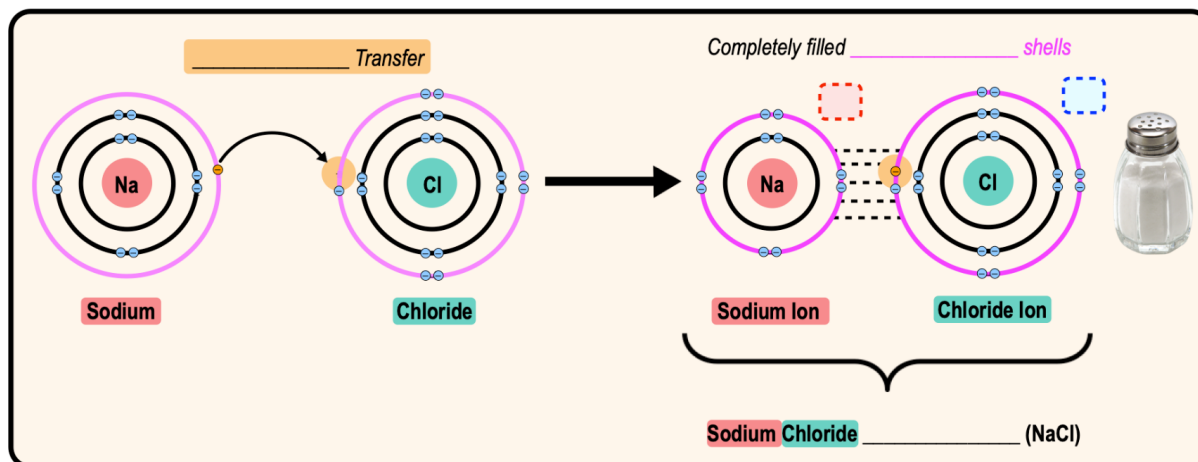
- a) Negatively charged cation.
b) Negatively charged anion.
c) Positively charged cation.
d) Positively charged anion.

CONCEPT: IONIC BONDING

Ionic Bonds

- _____ Bonds: electrical attractions between oppositely charged ions (cations & anions).
 - Transfer of _____ can fill the *valence shells* of BOTH atoms & create charges.

EXAMPLE: Formation of Ionic Bond in Sodium Chloride (NaCl).



PRACTICE: An ionic bond is a bond in which:

- a) Atoms share electrons.
- b) Atoms share a proton.
- c) Atoms of opposite charges attract each other.

PRACTICE: Cations and anions would be most frequently associated with which of the following:

- a) Polar covalent bonds.
- b) Van der waals forces.
- c) Ionic bonds.
- d) Nonpolar covalent bonds.
- e) More than one of the above is correct

PRACTICE: When are atoms most stable?

- a) When they have the fewest possible valence electrons.
- b) When they have the maximum number of unpaired electrons.
- c) When the valence shell is completely full of electrons.
- d) None of the above.

PRACTICE: Which of the following neutral atoms would be most likely to lose an electron and become a cation of +1?

- a) A.
- b) B.
- c) C.
- d) D.

