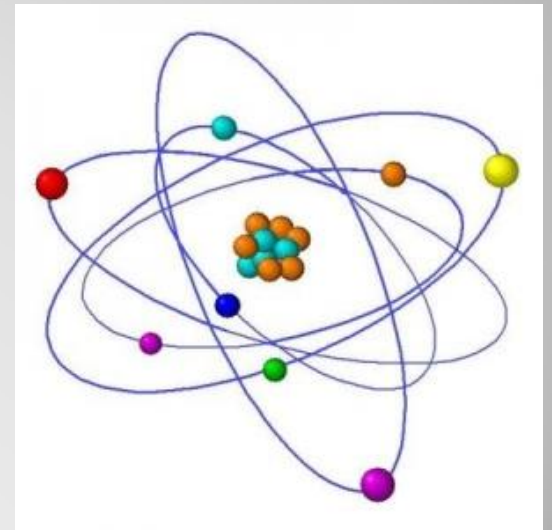
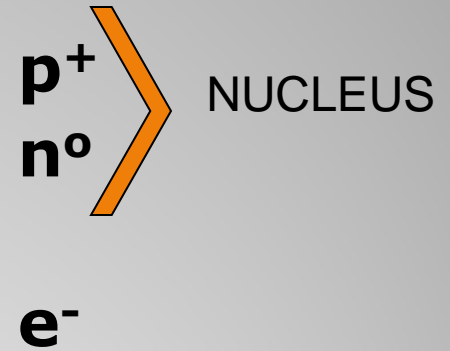


Atomic Structure

- **3 subatomic particles:**
 - **Proton (+ charge)**
 - **Neutron (neutral charge)**
 - **Electron (- charge)**



Atomic Size

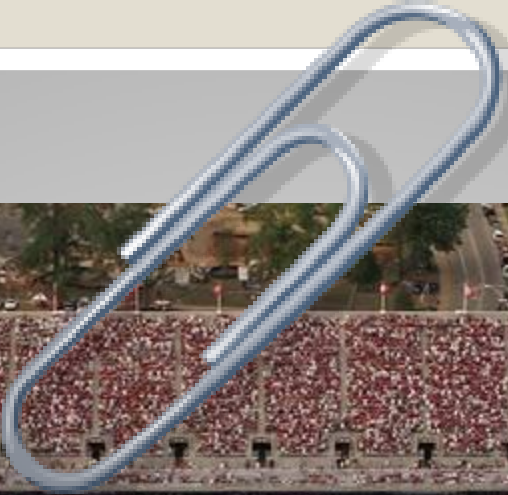
- **atom mass unit (amu)**

- **$p^+ = 1 \text{ amu}$**

- **$n^0 = 1 \text{ amu}$**

- **$e^- = 0.0005 \text{ amu}$**

$2000 e^- = 1 p^+$



Nucleus of an Atom

- **nucleus** → “core” of atom
 - contains 99.9% of mass of atom

The Octet Rule

- The Octet Rule = 8 valence electrons completes an energy level
- Atoms are most stable when their outermost energy level is filled
- Atoms bond to fill their outer energy level

ENERGY LEVELS

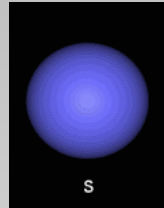
Energy Level	Maximum Number of Electrons
1	2
2	8
3	18
4	32

farther from
↓

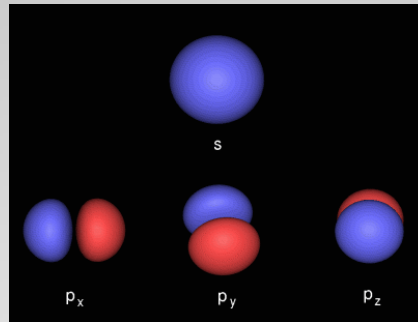
nucleus

higher energy
↓

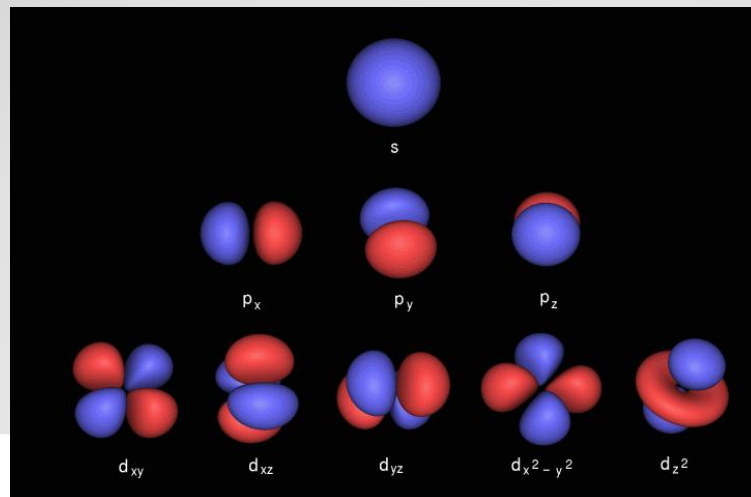
Electron Orbitals



1st Level → 2 e⁻



2nd Level → 8 e⁻



3rd Level → 18 e⁻

6

Atomic number

C

Chemical symbol

Carbon

Element name

12.011

Atomic mass

(average of all isotopes)

Chlorine

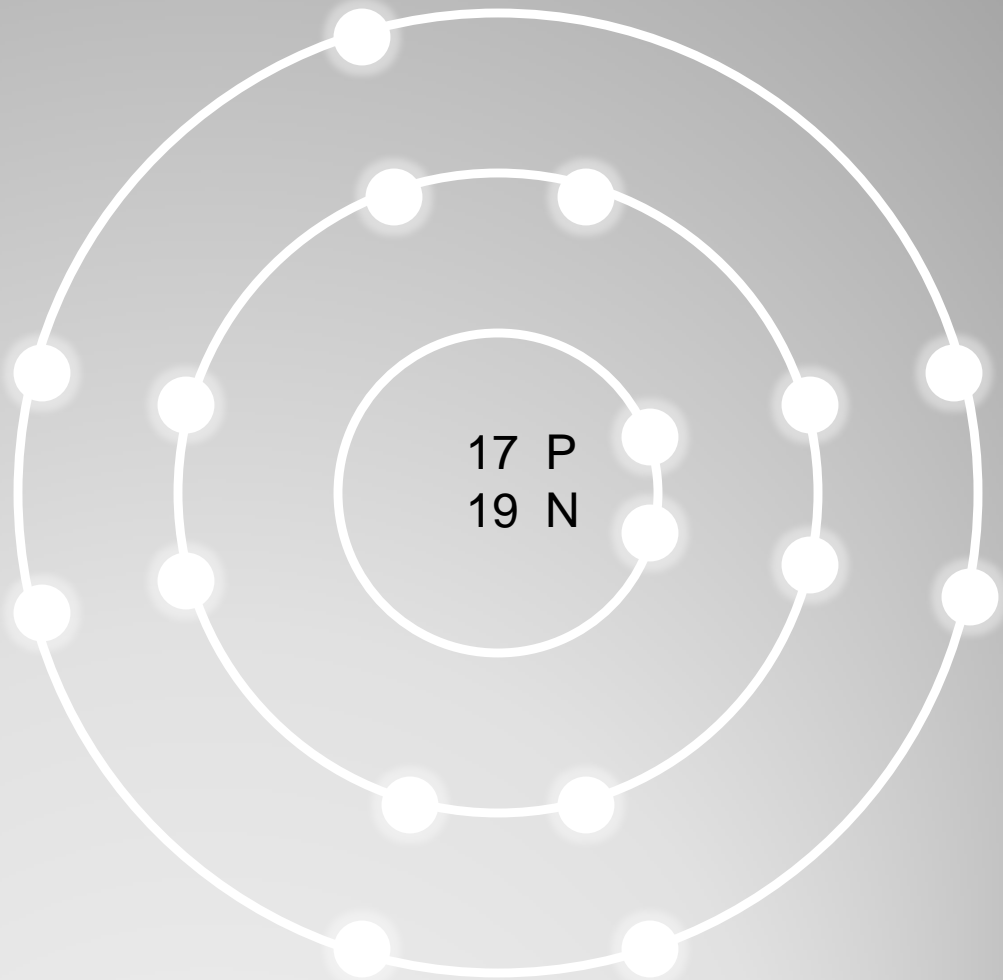
Atomic Number: 17

Atomic Mass: 36

of protons: 17

of neutrons: 19

of electrons: 17



Diagrams