Vagrant Valence Electrons

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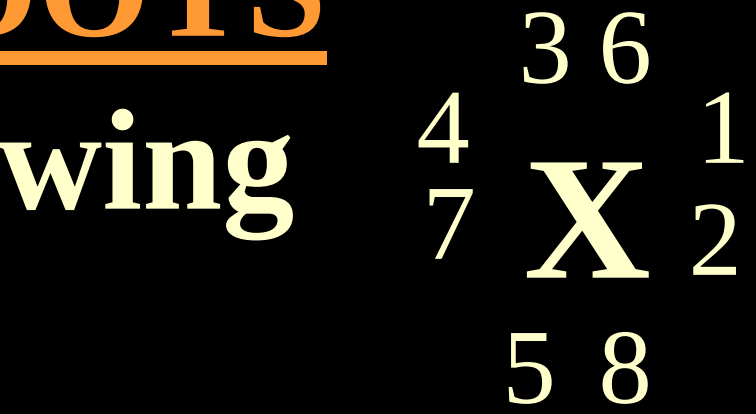
- **Valence electrons are the electrons in the HIGHEST occupied energy level of an atom.**

Vagrant Valence Electrons

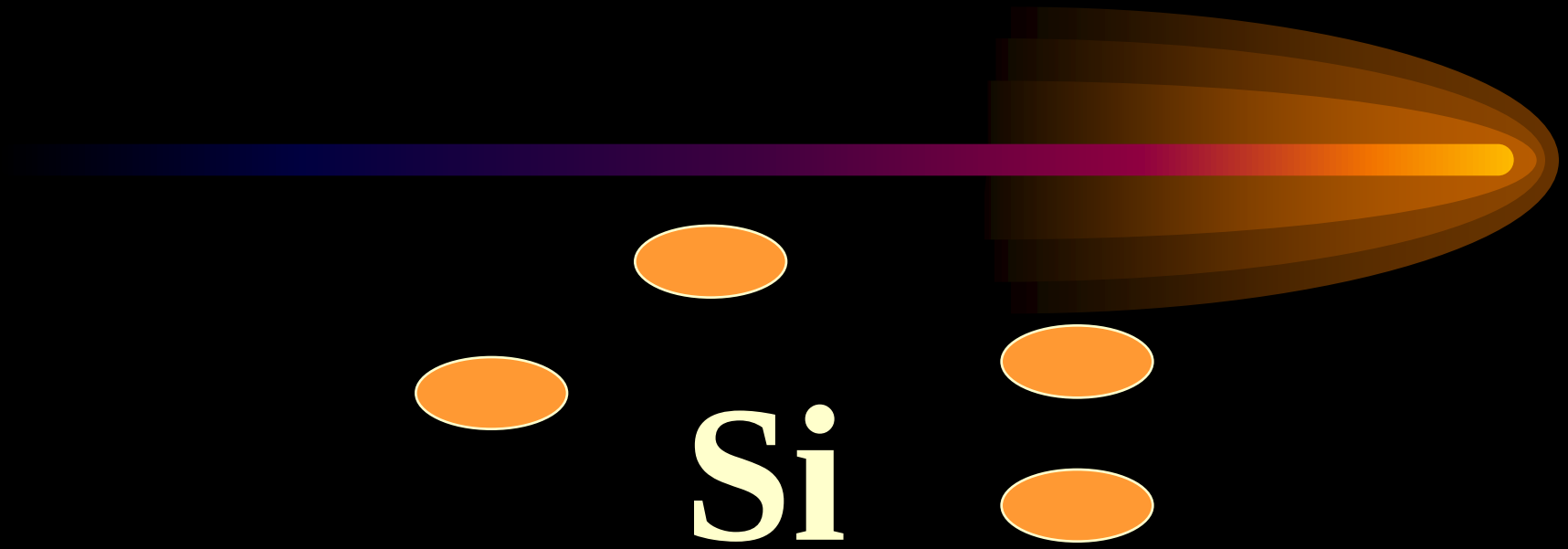
- **Electron dot structures show VALENCE electrons as dots.**

- **Electrons are shown as DOTS in the following diagram.**

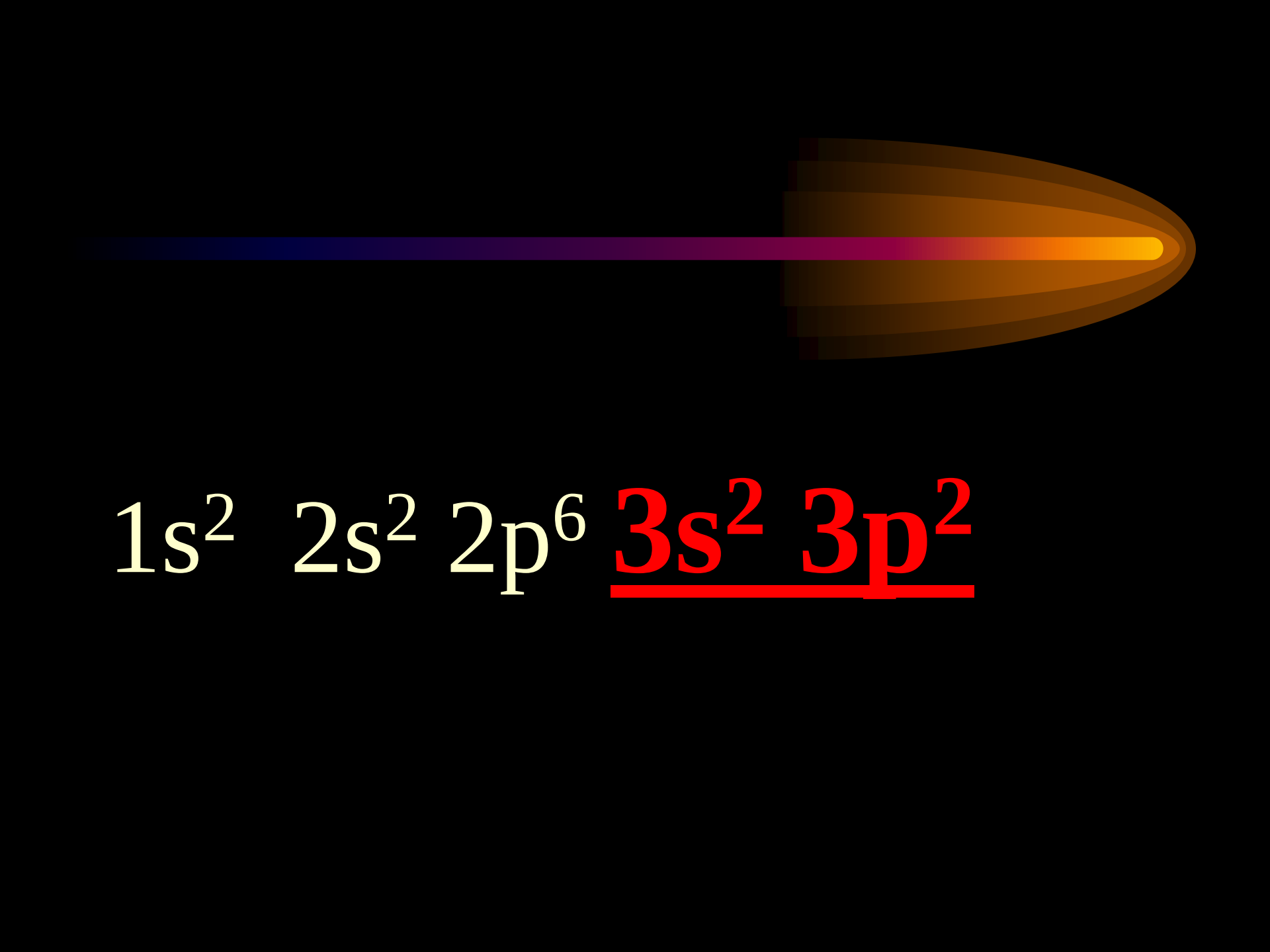


VALENCE electrons are the only electrons used in formation of **BONDS**, so they determine the **CHEMICAL** properties of an element.

1. What is the electron dot representation of Si?

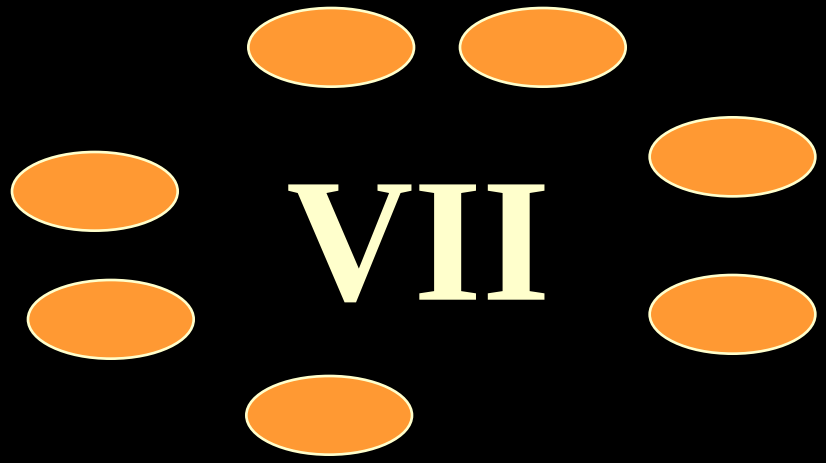

Si

2. Give the electron configuration for the valence electrons for Si.


$1s^2\ 2s^2\ 2p^6\ \mathbf{3s^2\ 3p^2}$

3. Give the electron dot representation and the electron configuration for the valence electrons in family VII.

$\_\ ?\ s^2\ ?\ P^5$



Octet Rule

- Atoms react by **CHANGING** (losing, gaining, or sharing) the number of electrons, so as to acquire the **STABLE** electron structure of a noble gas.

Octet Rule

- Each **NOBLE** gas with the exception of helium, has **8** electrons in its highest energy level.

Electronegativity

: **is the power of an atom to ATTRACT electrons to itself when it is bonded to another atom.**

Color the BACK of the periodic table

- Follow the directions for coloring each square given on page 6 of the packet. (color the edges only)

Summary

- Within a family, electronegativity generally **decreases** as the atomic number increases.

- Within a period, electronegativity generally **increases** when moving from family I to family VII.

- The greater the **difference** in electronegativity the greater the **strength** of the bond between the two atoms.

- The strength is measured in the amount of **energy** needed to **break** the bond.

Graphing Electronegativity Difference and Percent Ionic Character

- Use the data on page 7 of the packet. Follow the directions. Mark the divisions between the bond types.