

Exam 3 Test Prep

What is the electron configuration for S^{2-} ?

What is the condensed electron configuration for As^{2+} ?

What is the element with the electron configuration $1s^2 2s^2 2p^6$?

What is the element with the electron configuration for $[Ar] 4s^2$?

What is the condensed electron configuration for chromium?

Given the following, determine which rule of electron configuration is being broken?

If $n = 2$, then l can be _____

If $n = 4$ and $l = 1$, then m_l can be _____

What would be the quantum number for n , l , m_l , and m_s if you are given phosphorus?

What is the periodic trend for atomic radius and ionic radius?

What is the periodic trend for electron affinity, ionization energy, and electronegativity?

Match the term with the correct definition

| | |
|-------------------|--|
| Atomic radius | Addition of an electron to a gaseous atom (exothermic) |
| Ionization energy | Distance between the nucleus and a ring |
| Electron affinity | Attract shared electrons |
| Electronegativity | Energy to remove an electron from ground state of gaseous atom |

Which has the largest atomic radius? Na, Li, or S?

Which has the largest atomic radius? K^+ , Ar, Cl^- , or Ca^{2+}

Arrange elements in decreasing electron affinity: C, O, Na, F

Which element has the highest ionization energy? I, Na, or Cl

Arrange the following ions in order of increasing ionic radius: Li^+ , B^{3+} , O^{2-} , F^-

Match the terms:

Ionic Bonding

Nonmetal and Metal

Covalent Bonding

Electrons Shared

Metal and Metal

Metallic Bonding

Electrons transferred

Nonmetal and Nonmetal

Sea of delocalized electrons

What is a lattice structure? What affects lattice energy?

Rank the following compounds in order of decreasing lattice energy? LiCl, SrSe, and KBr

What is an allotrope? What are the allotropes of carbon?

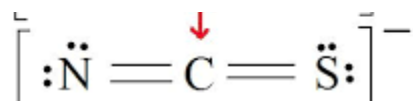
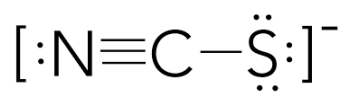
What are the exceptions to the octet rule?

What are the lewis dot structures for Na_2O , MgCl_2 , and NaHCO_3 ?

What are the lewis dot structures for CHCl_3 , ammonium, and SF_6 ?

Draw the resonance structures of ozone. Draw the hybrid resonance structure of ozone.

Which is the more dominant structure?

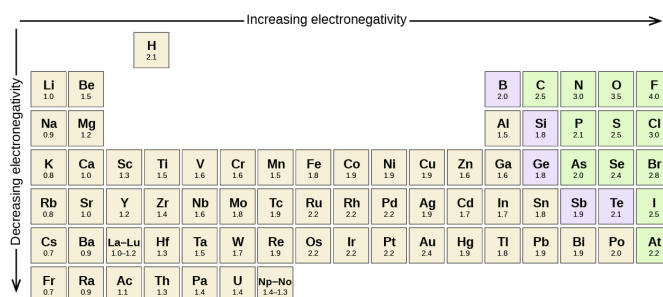


Determine whether each compound is polar, nonpolar, and ionic by looking at electronegativity differences. Indicate partial positive and negative charges.

O-O

O-H

Na-Cl

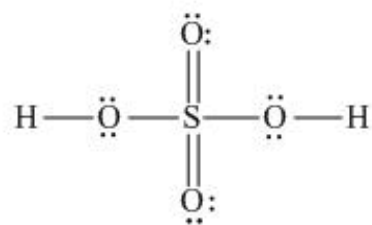


| | BF ₃ | Ammonia |
|------------------------------|-----------------|---------|
| Lewis dot structure | | |
| # e- domains | | |
| e- domain geometry | | |
| Molecular geometry | | |
| Bond Angle | | |
| Hybridization | | |
| Polar or Nonpolar Molecule | | |
| Polar or Nonpolar Bonds | | |
| Electronegativity difference | | |

| Number of Electron Domains | Electron Domain Geometry | Molecular geometry | Bond angle | Hybridization |
|----------------------------|--------------------------|--------------------|------------|---------------|
| | Linear | | | |
| | Trigonal Planar | | | |
| | Trigonal Planar | | | |
| | Tetrahedral | | | |
| | Tetrahedral | | | |
| | Tetrahedral | | | |

How many sigma and pi bonds are in C_3H_8 ? What is the hybridization of the second carbon?

How many sigma and pi bonds are in sulfuric acid? What is the hybridization of the sulfur?



How many sigma and pi bonds are in this molecule? What is the hybridization of the carbons with the arrows?

